Final
Environmental Impact Statement

for
the Nevada Test Site and Off-Site Locations
in the State of Nevada

Volume 3

Part A

U.S. Department of Energy
Nevada Operations Office
Las Vegas, Nevada

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SUMMARY

INTRODUCTION

On February 2, 1996, the U.S. Department of Energy (DOE) issued the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (NTS EIS) for review by the state of Nevada, Indian tribes, local governments, other federal agencies, groups and organizations, and the general public. The formal comment period lasted 90 days, ending May 3, 1996.

As part of the comment process, the DOE held public hearings in St. George, Utah, and in Pahrump, Reno, and Las Vegas, Nevada. Community Workshops were held in Caliente, Tonopah, Boulder City, and North Las Vegas, Nevada, in conjunction with the University of Nevada Las Vegas to discuss the Draft NTS EIS.

Volume 3 of the Final NTS EIS contains 3 chapters. Chapter 1 summarizes the major issues raised by the public. Chapter 2 contains the full text of the public comments on the Draft NTS EIS received by the DOE; it includes public hearing transcripts, written comments, and comments received via a toll-free comment "hot line." Chapter 3 contains the DOE's responses to the public comments and describes how the comments were considered in the Final NTS EIS.

METHODOLOGY

The DOE reviewed all comments on the Draft NTS EIS. Many of the comments required that the text of the Final NTS EIS be corrected, clarified, or otherwise revised. Each comment was reviewed for content and relevance to the environmental analyses and data contained in the NTS EIS, and addressed accordingly.

Spoken comments at public hearings and workshops were recorded by a court reporter and a verbatim transcript was produced (see Public Hearing Transcripts and Workshop Notes in Chapter 2 of this volume). The written comments and transcripts were reviewed and individual comments and questions were identified. Each comment and question identified is addressed in Chapter 3 of this volume. If a letter or transcript raised the same comment or question more than once, it is responded to the first time and subsequent comments and questions are cross referenced to this first response. The responses also indicate whether or not the text of the NTS EIS was corrected or revised because of the comment and, if so, which section of the NTS EIS contains the revision.

Many commentors raised similar issues and trying to answer each similar comment resulted in duplication of responses. In order to facilitate the review of the comment response document, Chapter 1 includes a discussion of these broader issues and a specific comment is referenced to the general discussion section of Chapter 1.

Some comments raised topics that are not pertinent to the EIS. In those cases, the DOE answered the questions or addressed the concerns; but no change to the text was made. Some comments indicated an agreement or disagreement with options within a specific alternative or certain aspects of an analysis. The DOE acknowledged these comments, but these comments did not result in changes in the text.

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CHAPTER 1
MAJOR ISSUES

Public comments on the Draft NTS EIS raised 12 topics of broad interest or concern. These topics, categorized as "Major Issues," are addressed in this chapter, and include the following:

1.1 Exclusion of the Yucca Mountain Project

1.2 General Anti-Nuclear Sentiment

1.3 American Indian Claims - Ruby Valley Treaty

1.4 Use of Lands Withdrawn from the Public Domain

1.5 Land Use under Interagency Memoranda of Understanding or Agreement

1.6 Transportation of Radioactive Waste

1.7 Role and Authority of the Resource Management Plan

1.8 Release of Withdrawn Lands

1.9 Perception Based Impacts on Prosperity and Economic Development

1.10 Residual Radioactive Contamination - Source Term

1.11 Hydrology and Water Resources

1.12 Radioactive Waste Shipments and Waste Types.

In Chapter 3 of this volume, when one of these topics is raised, the commentor and other readers are referred to these discussions to provide a comprehensive answer to the question raised.

MAJOR ISSUE DISCUSSION

1.1 Exclusion of the Yucca Mountain Project

Many comments questioned the exclusion from the NTS EIS of the possible disposal of spent nuclear fuel and high-level radioactive waste in a deep geologic repository at Yucca Mountain.

Concern was expressed over the separation of the analysis of DOE actions at Yucca Mountain and the NTS, especially waste disposal and transportation issues. Comments received strongly urged that these impacts be evaluated and included as part of the NTS EIS. Yucca Mountain-related transportation issues included many of the same issues as those discussed in Section 1.6.

The scope of the NTS EIS is limited to reasonably foreseeable operations and activities with the potential to occur at, or be associated with, the management and use of the NTS over the next 10 years. During the public scoping process, the DOE identified the potential construction, operation, and closure of a spent nuclear fuel and high-level radioactive waste repository at Yucca Mountain as outside the scope of the NTS EIS. Should the Yucca Mountain site prove suitable, Congress must authorize development of the site, and a license must be obtained from the Nuclear Regulatory Commission prior to the initiation of any construction activities. Construction of the repository would not begin within the 10-year timeframe covered by the NTS EIS.

The DOE's Civilian Radioactive Waste Management Program, which includes the Yucca Mountain Project, is governed by the provisions of the Nuclear Waste Policy Act of 1982, as amended, and is under the purview of the DOE's Office of Civilian Radioactive Waste Management. The

Office of Civilian Radioactive Waste Management's mission is different than that of DOE/NV. Both organizations coordinate ongoing activities through a Memorandum of Agreement. The overall intent of the agreement is to foster coordination and communication between the two organizations in order to avoid conflicts in the performance of their respective missions.

Yucca Mountain is a geological feature adjacent to the western boundary of the NTS. The Office of Civilian Radioactive Waste Management is currently engaged in the extensive characterization of Yucca Mountain and the surrounding area. The evaluation of the data and information gathered during this characterization process will be used to determine if Yucca Mountain is a suitable location for a permanent repository for spent nuclear fuel and high-level radioactive waste. Under Section 113 of the Nuclear Waste Policy Act, site characterization activities are designated as "preliminary activities" and are specifically excluded from the requirement of the National Environmental Policy Act to prepare an EIS for major federal actions. However, the NTS EIS takes Yucca Mountain site characterization activities into account as part of the description of the existing NTS environment in Chapter 4, as well as in the discussion of cumulative impacts in Chapter 6.

The Council on Environmental Quality's National Environmental Policy Act regulations, 40 CFR 1501.7(a)(5), require the DOE, as a lead agency, to indicate any public EISs that will be prepared and that are related to, but are not part of, the scope of the impact statement under consideration. The Office of Civilian Radioactive Waste Management will prepare an EIS to evaluate the potential environmental impacts from the construction, operation, and eventual closure of a repository at Yucca Mountain for the geologic disposal of commercial and DOE-owned spent nuclear fuel and high-level radioactive waste (60 FR 40164, August 7, 1995). The repository EIS will consider relevant information and analyses, including the NTS EIS, as appropriate, in its description of the existing environment, as well as in the analysis of cumulative impacts. The analysis of cumulative impacts will include the combined effects of transporting waste to the repository and to the NTS. In this way, the DOE will ensure that the cumulative effects from activities taking place or in the immediate vicinity of the NTS are considered in its decisionmaking process along with the public's comments on these activities.

1.2 General Anti-Nuclear Sentiment

Many comments expressed a general opposition to nuclear weapons, weapons testing, the generation of electricity by nuclear power, and the land disposal of nuclear waste.

Some comments opposed the proposed conduct of subcritical experiments and expressed concern about the relationship between subcritical experiments and the successful completion of the ongoing negotiations of the Comprehensive Test Ban Treaty. Other comments reflected public support for the testing program and the positive economic benefit to the surrounding rural communities from NTS activities, and a desire for future stockpile activities to be located at the NTS.

The DOE recognizes that many people are opposed to the development and testing of nuclear weapons and the commercial use of nuclear power. These views, as important as they may be to the individuals holding them, are not relevant to the issues and alternatives examined in the NTS EIS. Since the 1940s, Congress has directed the DOE and its predecessor agencies to develop and produce the nation's nuclear weapons, and to ensure the reliability and safety of the nuclear weapons stockpile. With the end of the Cold War, Congress directed the DOE to stop producing nuclear weapons, dismantle some existing weapons, and maintain a smaller enduring stockpile. As a result, the DOE has closed or consolidated some of its former weapons production facilities.

In 1992, the United States declared a moratorium on underground nuclear testing. In 1995, the President extended the moratorium, and is pursuing a Comprehensive Test Ban Treaty. Even with these significant changes, the Congress passed the

National Defense Authorization Act for Fiscal Year 1994 (Public Law 103-160) which directed the DOE to maintain a high level of confidence in the safety, reliability, and performance of the nuclear weapons stockpile, and to maintain the ability to design, develop, manufacture, and test nuclear weapons. The NTS has been, and remains, the nation's only location for nuclear weapons testing, to meet the national defense mission.

Commentors have expressed concern about the conduct of subcritical experiments described in this EIS. The term, "subcritical experiments," does not define a new form of activity. It is intended to clarify the fact that such experiments could not achieve the condition of criticality, and they would meet current and prospective United States commitments to the moratorium on nuclear testing and the anticipated Comprehensive Test Ban Treaty. Although the term "subcritical" was not used in previous EISs for the NTS, some tests and experiments conducted over the past four decades, as well as the impacts of those tests and experiments, are substantially the same as those contemplated by the new terminology.

With regard to nuclear waste, Congress has directed the DOE to decontaminate surplus facilities, remediate contaminated areas no longer required for defense purposes, and dispose of defense-related nuclear waste in a safe and environmentally sound manner. See additional discussion under Section 1.1 and 1.12 of Volume 3.

1.3 American Indian Claims to Withdrawn Lands - Ruby Valley Treaty

Many comments referenced the long-standing claims, by the Western Shoshone Indians, to 24 million acres of land in Nevada, including the western half of the NTS. Some comments asserted that these lands should be returned to the Western Shoshone Indians, and that the federal government has no right to use the land for any purpose whatsoever, including those potential uses addressed in the NTS EIS.

In the early 1950s, the Western Shoshone filed a claim concerning the lands at issue under the Indian Claims Commission Act. This Act provided that if a claim against the government for unkept treaty promises was upheld, the tribe making the claim could receive only a monetary award, not land or other remuneration. In 1962, the Commission ruled that all Western Shoshone land titles had been extinguished, and later, to establish valuation for a monetary award, set July 1, 1872, as the date the land was taken. In 1976, the Commission awarded the Western Shoshone $26 million as payment for the land. The Western Shoshone refused to accept payment, arguing that rejection of the money meant that they had not been compensated and their claim to the land was still alive. With interest, the award, held in the U.S. Treasury in trust for the Western Shoshone, is now more than $100 million.

The land ownership issue has been brought to court on several occasions. In 1984, the U.S. Supreme Court agreed to hear the case, considering only the issue of whether "payment" for the land had been made. In 1985, the Supreme Court held that the payment had been made in accordance with the Indian Claims Commission Act of 1946. This constituted full and final settlement for the land. Whether or not the Western Shoshone accepted the payment had no effect on the transaction; the land was ruled to belong to the United States. Subsequent challenges to this ruling have been made before the U.S. Circuit Court of Appeals for the Ninth Circuit who reiterated the Supreme Court decision: the Western Shoshone have no right to the land. In response to a subsequent appeal, the U.S. Supreme Court refused to hear the case, letting the appellate court decision stand.

The DOE is aware of significant disagreement with the rulings, especially by the Western Shoshone, and recognizes that there may be additional challenges and appeals. The U.S. Government and the DOE will abide by any new rulings made on this subject.

1.4 Use of Withdrawn Lands for Purposes Other than Weapons Testing

Several comments questioned the inclusion and consideration of potential activities and operations on the NTS that are viewed as inconsistent with the original purpose and use of the withdrawn lands.

These comments expressed the concern that because the land withdrawals for the NTS are for the purpose of nuclear testing, other activities such as waste management, the construction and operation of solar power generating facilities, and the defense and heavy industrial facilities described in the EIS are inconsistent with the Public Land Orders.

The NTS was created through the issuance of four Public Land Orders. Public Land Order 805, dated February 12, 1952, reserved lands for the use of the U.S. Atomic Energy Commission, the DOE's predecessor, as a weapons testing site. Subsequent withdrawals in 1958, 1961, and 1965 reserved the withdrawn lands for use of the Atomic Energy Commission in connection with the NTS. The 1961 withdrawal was more specific in that it reserved the lands for use of the Atomic Energy Commission in connection with the NTS for test facilities, roads, utilities, and safety distances.

In 1983, the U.S. Bureau of Land Management, in accordance with the Federal Land Policy and Management Act of 1976 (Public Law 94-579), conducted a review of the existing four land withdrawals that comprise the NTS. The Bureau of Land Management report compiled during its review acknowledged that, while the primary mission of the NTS continued to be weapons testing, other activities and projects were also being pursued. The reports specifically referred the readers to the Final EIS (ERDA, 1977) for "a more detailed explanation of activities and projects." Thus it is clear that the Bureau of Land Management was well aware of the DOE's multiple land uses, including radioactive waste disposal, NTS farm experiments, emergency response tests, etc. Thus informed, the Bureau of Land Management District Manager concurred with the review's conclusion that the lands were still being used for the purpose for which they were withdrawn. The Bureau of Land Management found that any new land uses at the NTS at the time were not inconsistent with that original use.

The Federal Land Policy and Management Act of 1976, its implementing regulations, and the Public Land Orders themselves are silent on the use of withdrawn lands for related purposes. There are no specific prohibitions against additional use, if the purpose for which the withdrawal was authorized remains valid. There is clearly no prohibition of the consideration of alternative uses, through an EIS or otherwise, of withdrawn lands as a management or administrative action to assess the potential for additional beneficial uses of such lands.

The Department of the Interior is vested with oversight responsibility to review existing land withdrawals under the Federal Land Policy and Management Act. The Department of the Interior has suggested in its comments on this EIS that substantial changes in land use at the NTS may require a new land withdrawal. While the DOE believes that land use at the NTS is compatible with the primary purpose of each land withdrawal, the most recent comments from the Department of the Interior indicate that a review of the existing land withdrawals may be prudent.

As has been its past practice, the DOE continues to be committed to ensuring that all future activities contemplated in this EIS are conducted in compliance with Federal Land Policy and Management Act and federal land withdrawal policy. In this regard, the DOE will consult with the Department of the Interior to ensure that the appropriate process is followed to enable DOE to fulfill this commitment.

1.5 Land Use Under Interagency Memoranda of Understanding or Agreement

Some comments asked about the interagency and intra-agency land use agreements that cover use of lands discussed in the NTS EIS.

These comments focus more directly on the interrelationship and significance of the agreements between the Department of Defense and between the DOE/NV and the Yucca Mountain Site Characterization Office. Some comments questioned the authority of the DOE to enter into such agreements, others asserted that DOE cannot authorize the use by other federal agencies of lands under its jurisdiction.

There are three land use agreements that involve some of the lands that are the subject of the discussions and evaluations contained in the NTS EIS. Two of these agreements are interagency agreements between the U.S. Air Force and the DOE. The first of these agreements is a Memorandum of Understanding between the DOE and U.S. Air Force that grants the DOE use of Pahute Mesa on the Nellis Air Force Range Complex. The second interagency agreement is a Memorandum of Agreement that grants the DOE use of portions of the U.S. Air Force's Tonopah Test Range. These Memoranda of Agreement are authorized under Section 3(f) of the Military Lands Withdrawal Act (Public Law 99-606, November 6, 1986), which allows other activities to occur on lands reserved for military purposes.

The third land use agreement is an intra-agency Memorandum of Agreement between the DOE/NV and the DOE Yucca Mountain Site Characterization Office. This Memorandum of Agreement allows the temporary use of a portion of the lands withdrawn for the NTS under Public Land Order 2568, and some of the existing facilities of Area 25 of the NTS for various site characterization activities required under the Nuclear Waste Policy Act of 1982, as amended. The Memorandum of Agreement further allows the use of other areas of the NTS for field studies associated with site characterization activities, conditional on those activities' noninterference with approved NTS programs. This Memorandum of Agreement serves to coordinate activities and infrastructure support services such that the mission objectives established by Congress for both the DOE organizations can be accomplished in an organized and efficient manner.

1.6 Transportation of Low Level Radioactive Waste

Many comments raised issues relating to the transport of radioactive wastes from other DOE facilities and operations to the NTS. These comments range from demands for the DOE to select transportation routes in the NTS EIS to the suggestion that the DOE should contractually obligate selected carriers to specific rest stop locations along specified routes. Transportation-related comments also included requests for additional institutional interaction and communication. State, county, and municipal governments also recommended specific mitigation measures regarding enhanced communication and training, and provision and maintenance of equipment.

Transportation of materials and waste were identified as a primary concern by stakeholders prior to the initial scoping process for this EIS. The stakeholders formed several working groups to further their discussions with the DOE on transportation. One of the primary groups was the Transportation Protocol Working Group, established to work with the DOE to better define stakeholder concerns and develop a set of recommendations. The recommendations request services from the DOE that would assist the stakeholders in resolving their concerns. The summary of the Transportation Protocol Working Group concerns are as follows:

Vehicles, Routing and Parking

Major issues in this area include routing and routing methodologies, use of contract rather than common carrier, multiple drivers, adherence to drivers advisories, the safety inspection program for carriers and the need

for secure parking for vehicles after duty hours at the NTS.

Emergency Response and Management

Emergency response concerns include the need for radiation detection and emergency response equipment, emergency response training, and emergency management plans.

Communication

The major concerns in this area include shipment notification and other associated data and information from the on-going and future activities associated with transportation of low-level radioactive waste, including annual reports for transportation activities. A continued commitment from the DOE to meet with the Transportation Protocol Working Group to resolve ongoing transportation issues was requested.

The DOE presently is reviewing these recommendations. Its response could include implementation of some of the recommendations in the near future, such as secured parking for the shipments during off-duty hours and access to equipment. The DOE and Transportation Protocol Working Group have agreed to meet several times a year, or when necessary, as well as to keep all other avenues of communication open to assist the stakeholders with their concerns with transportation. Presently, the DOE/NV is reviewing inventories for radiation equipment to see if any of this equipment can be donated to the local communities and counties.

The routing of radioactive materials (including waste) being shipped on the nation's highways and roads is subject to regulations that are administered and enforced by the U.S. Department of Transportation. The primary objective of these regulations is to ensure that the motor vehicle transporting a regulated quantity of radioactive material is operated on routes that minimize radiological risk (49 CFR 397.101[a][1]). The DOE will continue transporting radioactive materials in accordance with these regulations.

Route Selection. The shipper selects the carrier, and it is the carrier's responsibility to select a route between the shipper's location and the destination that is in compliance with all applicable Department of Transportation regulations. The same regulations apply whether the carrier is a common carrier, contract carrier, or if the shipper operates its own transport vehicle. No individual, entity, organization or jurisdiction may select or require routing that is not in compliance with these regulations which require that when evaluating routing options and the radiological risk of transport, the carrier must consider:

1. Known accident rates along potential routes
2. Transit time
3. Population density and activities
4. Time of day and day of the week that transport will occur.

Written Route Plans. Before departing, the carrier must prepare a written route plan and supply a copy of the plan to the motor vehicle driver and shipper. Any departure from the route plan and the routes actually used, and the reason for it, must be reported in an amendment to the route plan delivered to the shipper as soon as practicable, but within 30 days following the deviation. The route plan must include:

1. A statement of the origin and destination points, the route selected, all planned stops, and estimated departure and arrival times

2. Telephone numbers which will access emergency assistance in each state to be entered.

Safe Haven and Parking. The Department of Transportation regulations provide a State the authority to identify safe haven parking areas, to impose limitations on time of day that transport takes place and holiday and peak traffic limitations. The State of Nevada has not chosen to implement any of these requirements. Clark County and numerous cities within Clark County have implemented regulatory notification requirements for hazardous and radioactive materials, including waste, prior to entry. In response to the stakeholders concern, the DOE will provide parking inside the secured area of the NTS for shipments arriving after duty-hours.

Transport Motor Vehicle Operator Training. The Department of Transportation regulations stipulate that no person may transport a regulated quantity of radioactive materials on a public highway unless the driver has been trained in:

1. Requirements of 49 CFR Parts 172, 173, and 177 pertaining to the radioactive materials being transported
2. The properties and hazards of the radioactive materials being transported
3. Procedures to be followed in case of an accident or emergency.

Emergency Management. The Superfund Amendments and Reauthorization Act of 1986 requires state and local jurisdictions within the United States to plan for and have the capability to respond to incidents involving all hazardous materials, including waste, that reside in or pass through their jurisdiction. This process is implemented through the Local Emergency Planning Committee and the State Emergency Response Commission. As part of this program, local communities and counties are required to implement an Emergency Response Plan. These plans define chain-of-command, notification procedures, and evacuation procedures for each community.

Emergency Response Training. For the past 15 years the DOE has provided training to responders in Nevada through the First-On-Scene Program. This training will continue to be made available to state regulators, educators, the public, and authorities (firefighters, law enforcement, and emergency medical personnel) within Nevada. Training courses for environmental protection, safety and health, transportation, radioactive materials management, and environmental restoration, and classes that meet or exceed federally mandated training requirements for personnel involved with the generation or disposal of radioactive or hazardous waste, can be provided by the DOE/NV.

1.7 Role and Authority for the Resource Management Plan

Several comments requested additional information on the role and authority of the NTS Resource Management Plan in shaping the future use of the NTS. Comments included questions on how the Resource Management Plan will be developed and the public's ability to provide input in its formulation, challenges to DOE's concept of the principles of "ecosystem management," and suggestions that the Resource Management Plan would have little or no authority to protect natural resources on the NTS.

The goal of the *Resource Management Plan* is to establish a process for managing resources to ensure long-term diversity and productivity of affected ecosystems and sustainable use of land and facilities on the NTS. The DOE/NV will use the *Resource Management Plan* to assess the impact of existing facilities and activities, and evaluate the selection, design, location, and impact of proposed facilities and activities. The *Resource Management Plan* will be an essential part of the comprehensive land-use process required by DOE Order 430.1, Life-Cycle Asset Management. Interested parties will have opportunities to provide input into the selection of goals developed to guide management of resource issues on the NTS and to assist in the development of management actions needed to achieve those goals.

The *Framework for the Resource Management Plan* was developed using principles of ecosystem management that are widely accepted. Reports, including those by the U.S. Interagency Ecosystem Management Task Force, were reviewed to help establish a solid basis for the *Resource Management Plan*. Public participation is an essential element of these principles. The DOE's efforts to gather public input for the "framework" document in the NTS EIS prior to developing the actual plan is intended to reflect the DOE's commitment to public participation in this effort. The framework document includes commitments to work closely with surrounding land managers, government agencies, tribal organizations, and other interested parties.

1.8 Release of Withdrawn Lands

Several comments suggested that all DOE activities and operations at the NTS should cease and that the withdrawn lands which comprise the NTS, or portions of the site, should be returned to the State of Nevada, the public, the Western Shoshone, or the Bureau of Land Management. Many comments emphasized that environmental restoration should occur prior to release.

Alternative 2 of the NTS EIS addresses the environmental impacts of discontinuing DOE and interagency programs and operations at the NTS. While this alternative does not include the return of withdrawn lands, the relinquishment of these lands from DOE control would be subject to certain laws, regulations, and withdrawal agreements.

The NTS was created through four Public Land Orders that reserved the land for use by the DOE's predecessor, the U.S. Atomic Energy Commission, for weapons testing. Should it be determined that the NTS, or portions of the site, are no longer required for the purpose for which it was reserved, the lands must be returned to the U.S. Department of the Interior under the provisions of the Federal Land Policy and Management Act, and the four Public Land Orders.

Before a withdrawal (or portions thereof) may be terminated and lands relinquished to the Department of the Interior, the issue of the suitability of lands for return to the public domain must be resolved. The Department of the Interior's Bureau of Land Management must determine if hazardous substances exist on the withdrawn land. The Bureau also has the discretion to conduct a hazardous substance survey to verify the representations of the holding agency regarding the presence or absence of such substances. If hazardous substances exist on the land, the holding agency can be required to decontaminate all affected lands according to the standards promulgated by the state regulatory authority, the U.S. Environmental Protection Agency (EPA), or both, prior to terminating the withdrawal. The Bureau of Land Management will weigh the cost of long-term monitoring, inspection, cleanup, and rehabilitation against the value of the resources for existing Bureau programs before accepting jurisdiction of any contaminated lands. If the lands are accepted for return to the public domain, the Bureau will determine the proper management prescriptions for the lands being returned. These prescriptions may range from a recommendation that a new withdrawal be pursued to multiple-use management consistent with area land-use policies.

1.9 Perception-Based Impacts on Regional Prosperity and Economic Development

Several comments alleged a direct link between the public perception of activities conducted at, or in relationship to, the NTS and regional prosperity and economic development. The activities of concern included the shipment of waste to Nevada and especially through Las Vegas, the disposal of radioactive waste, and defense related nuclear activities. Many comments asserted adverse impacts, such as loss of jobs in Las Vegas and the state of Nevada, while others concluded that beneficial impacts, as the result of economic diversification and increased employment opportunities, were likely.

It is well established that the perception of the risk of adverse impacts is outside the sphere of topics that are subject to examination under the National Environmental Policy Act. Nevertheless, the DOE believes that the perception of NTS-related activities by the public has not negatively impacted the regional economy.

The prosperity or economic development of an area depends on the characteristics or factors that define the region. The character of an economy is comprised of variables that combine to form an overall perception of an area. How these factors are interpreted depends on the value systems of individuals. These factors (industrial development, entertainment resort destination, gambling, legalized prostitution, nuclear complexes, etc.) can be perceived as either positive or negative depending on the underlying value systems of the individual.

The DOE is aware of no information that describes a deterioration of the economic environment in southern Nevada based on development activities or perceptions associated with the NTS. In fact, southern Nevada is one of the fastest growing urban areas in the United States. Between 1980 and 1990, the population of Clark County increased from 463,087 to 797,142 (72 percent), and the total jobs increased by 182,776. Total visitor volumes in Clark County increased from 14.2 million in 1985 to 29 million in 1995, an increase of 104 percent over the 10-year period.

Based on the foregoing, it is reasonable to conclude that the perceptions of southern Nevada have not adversely affected the prosperity and economic opportunities of the region. In addition, there is no evidence to indicate that the past activities associated with the NTS over the past 40 plus years, or the potential future activities discussed in the NTS EIS, would alter the potential for continued prosperity and development in the region.

1.10 Residual Radioactive Contamination - Source Term

Several comments questioned the accuracy of estimated levels of residual radioactive contamination on the land surface, in the underground environment, and in groundwater resources beneath the NTS. Concerns were expressed about the methodology and data used to make these estimates, asserting that the low values used resulted in an underestimate of potential risks to public health and safety. Many comments indicated that confidence in the estimates provided in this EIS could be improved if the DOE released classified information on historical nuclear weapons testing.

The accuracy of estimated contamination is a central issue in any study conducted to clean up contaminated sites. Surface soil, subsurface rock, and groundwater contamination on the NTS are being characterized by the Environmental Restoration Program to determine the best approach for cleanup and monitoring. These efforts rely on an extensive historical database and on newly collected data.

New data are collected under protocols prescribed by the EPA and the state of Nevada. Some methodologies were developed by DOE specifically to detect contaminants not commonly present at other sites, such as certain radionuclides. All these methodologies are designed to meet objectives for data quality agreed upon with the EPA and the State. Existing data are used whenever possible to reduce the cost to taxpayers by avoiding duplication of earlier studies. As might be expected, some existing data meet or exceed present quality standards, while other data are of lower quality. The DOE attempts to maximize the use of existing data, consistent with its quality for the intended use. Extensive documentation of the work plans, standard operating procedures, and quality assurance checks are maintained for all data, but are too extensive to include in this EIS.

The classified nature of some of the data presents a challenge to the DOE. While national security is of paramount importance, the DOE recognizes that the public may perceive the DOE as using classification as a cloak to avoid scrutiny of basic data. In particular, the total radionuclide inventory remaining in the subsurface at the NTS raises significant classification issues. Release of radionuclide inventories for specific nuclear tests can reveal much about the types and amounts of special nuclear material used in weapons design and the efficiency of these weapons. In fact, the DOE routinely analyzed samples of the residual melt glass to determine the success of the test. So, although researchers from the nation's weapon-design laboratories have developed extensive data to help estimate the nature and extent of contamination underlying the NTS, the data remain classified.

The DOE is trying to resolve this issue with a two-fold approach. First, declassification actions have been proposed which would sum, or lump together, data from many tests so that no classified information would be revealed. The data presented in this EIS are the result of one declassification action and are made available to the public here for the first time. Other declassification actions are pending which, if approved, will allow the lumping

of data in smaller areas. The second approach is to grant access to classified data to organizations with persons having an appropriate security clearance and need-to-know. To date, several representatives of the State of Nevada's Division of Environmental Protection have been given access to the source term inventory data. In addition, a representative of the University of Nevada Las Vegas, Harry Reid Center for Environmental Studies, has been granted access to the source term data. It is hoped that these two approaches will raise confidence in the accuracy of the source term data.

1.11 Hydrology and Water Resources

Several comments expressed concern about the impacts of the proposed action on the regional groundwater flow system, especially with respect to drinking water supplies in Amargosa Valley and the environmentally sensitive areas of Ash Meadows, Devils Hole, and Death Valley. Other comments requested clarification of water rights issues concerning actions that are not perceived to be within the DOE's mission.

A cornerstone of the DOE's environmental policy is the protection of water resources. This policy has been put into action through monitoring, characterization studies, and investigations of contaminant sources. Since 1972, the DOE has conducted an extensive groundwater monitoring program, with samples taken routinely at wells and springs located on and off the NTS. Because Amargosa Valley and other environmentally sensitive areas are downgradient of the NTS, the DOE monitors springs in Ash Meadows and as far away as Death Valley. This monitoring network provides the DOE with a first line of water resource protection by detecting water-quality problems before they extend to these downgradient areas.

The DOE sponsors research on the hydrology of the NTS and the fate of radionuclides in the environment. Characterization studies for the DOE's Environmental Restoration Program focus on defining the transport of radionuclides in the vicinity of past underground tests; the installation of an extensive array of new characterization wells; and detailed studies on the effects of past testing on infiltration, the mechanics of the aquifers present, and water level changes in the vicinity of detonations. The DOE has been an active participant in evaluating the conditions that support the endangered pupfish at Devils Hole and has been a partner with other agencies in defining the complex hydrologic conditions of the Death Valley groundwater flow system.

An inventory of past hydrologic studies is underway and has identified more than 2,000 documents that are relevant to the water resources and hydrologic conditions of the region. The information presented in this EIS must be of a summary nature; it is not possible to include all of the information that the DOE has accumulated over the decades. A large amount of unclassified information is available in the public reading room, or upon request, to interested parties who seek more detailed information on the specific hydrologic characteristics of this region.

It is not practical to present in this EIS detailed information on the 3-dimensional distribution of contamination around each underground test site. The information from these studies is referenced in this EIS and dozens of more-detailed reports are available to the public and interested groups and agencies. This information will, however, be provided, to the extent available, in the Environmental Restoration studies of the testing areas.

With respect to water use at the NTS, the DOE would pursue water rights for activities determined to be outside of the NTS mission.

1.12 Radioactive Waste Shipments and Waste Types

Several commentors noted differences between the radioactive waste volumes and resulting waste shipment estimates presented in the Draft Waste Management Programmatic EIS, the Baseline Environmental Management Report, and the Draft NTS EIS. Comments noted that these differences in the data also resulted in different risk assessment results. It was further noted that the waste transportation risks reported in the Draft Waste Management Programmatic EIS, were higher than those reported in the Draft NTS EIS.

Commentors also questioned the relationship between various terms used to refer to low-level waste in the Draft NTS EIS. Commentors were confused by the terms "greater-than-Class C," "similar to greater-than-Class C," "inappropriate for shallow land disposal," and "special case waste," and questioned whether the Draft EIS had devoted adequate attention to waste represented by these terms. In particular, commentors criticized the Draft EIS's lack of any mention of special case waste, and the lack of analysis of disposal of greater-than-Class C waste, in view of a recent announcement that the DOE is studying the co-disposal of greater-than-Class C waste with DOE special case waste that is similar to greater-than-Class C waste.

Comparison between the NTS EIS and the DOE Waste Management Programmatic EIS

Commentors compared the NTS EIS and the DOE Waste Management Programmatic EIS and pointed out various differences between the two documents in terms of waste volumes, numbers of shipments, and risk estimates. These differences arise from the different purposes and scope of the two documents. The Waste Management Programmatic EIS is designed to establish a broad framework of reasonable alternatives for consideration by the public and DOE decisionmakers in support of broad programmatic decisions. Data used for analysis of this type often must be aggregated or summarized for consistent application, and to ensure that the relative differences in impacts among programmatic alternatives are clear to decisionmakers. In contrast, the NTS EIS has a sitewide focus and uses more detailed data specific to the site. Also, broadly scoped programmatic EISs make more conservative assumptions to ensure that the range of possible alternatives across a complex array of program activities are adequately bounded. As a result, the DOE would expect the estimates of waste volumes and health risks in the Waste Management Programmatic EIS to be at least as high or higher than related estimates in sitewide or project-specific National Environmental Policy Act documents. Other differences arise because the analyses presented in the NTS EIS assess the range of reasonably foreseeable activities at the NTS over the next 10 years, whereas the Waste Management Programmatic EIS is designed to support DOE programmatic decisions affecting DOE-wide waste management activities over the next 20 years. Given these differences, the DOE believes that the results presented in the two documents are reasonably comparable.

Special Case Waste

Commentors criticized the Draft EIS because it did not address "special case waste." Text has been added to the Final NTS EIS to explain this term in the context of the NTS's waste management program.

The designation of a particular waste as "special case waste" is a site-specific determination which, if made at one DOE site, may or may not be applicable at another DOE site. "Special case waste" is not a formal technical waste category in the same sense as "transuranic waste" or "low-level waste"; rather, "special case waste" is a temporary, informal designation by the generating site to identify waste that exhibits characteristics which indicate that further analysis may be necessary to properly categorize it, or that may require special handling, storage, or disposal methods. These characteristics are taken into account in determining whether waste can meet a potential disposal site's acceptance criteria. In making this determination,

the DOE considers a number of factors, including safety analysis reports and hazard assessments, performance objectives, disposal site characteristics and operational restrictions, applicable federal regulations and DOE orders, as well as input from stakeholders and from the Defense Nuclear Facilities Safety Board. If a designated "special case waste" is determined to meet a disposal site's acceptance criteria, it is no longer considered to be "special case waste," and is considered acceptable for disposal notwithstanding its earlier "special case" designation. At that point, the fact that the waste was once classified as special case waste is irrelevant as far as disposal is concerned.

The DOE intends to clarify its use of the term "special case waste" in the Final Waste Management Programmatic Environmental Impact Statement. The clarification will reflect the dynamic nature of the DOE's special case waste inventory. The Final Waste Management Programmatic EIS will also reflect the DOE's intent to manage this waste within existing waste categories to the extent possible, consistent with the process described above. The DOE will prepare any necessary additional National Environmental Policy Act documentation for proposals for actions regarding special case waste not covered by existing National Environmental Policy Act documents.

Greater-Than-Class C Waste and Similar to Greater-Than-Class C Waste

Some commentors urged that DOE use the NTS EIS to evaluate options for disposal of greater-than-Class C low-level waste. In urging this course of action, one comment referred to a 1995 DOE Federal Register notice as evidence that the DOE is formulating plans for the co-disposal of greater-than-Class C waste and waste that is similar to greater-than-Class C. Also, some commentors either did not understand the distinction between the terms "greater-than-Class C" and "similar to greater-than-Class C," or believed that the DOE was trying to create an artificial distinction between two types of waste to avoid discussing greater-than-Class C waste in this EIS.

The confusion surrounding these two terms arises from the legal definition of greater-than-Class C waste. The Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240) made the federal government responsible for the disposal of certain high-specific-activity, low-level waste with concentrations of radionuclides that exceed the limits for Class C radioactive waste established by the Nuclear Regulatory Commission. This waste is commonly referred to as "greater-than-Class C low-level waste." Most of this waste is generated by commercial facilities, and is therefore also referred to as "commercial greater-than-Class C waste." The same section of Public Law 99-240 also made the federal government responsible for all DOE-generated low-level waste as a separate category, without regard to class. The DOE waste with characteristics comparable to those of greater-than-Class C is referred to as "similar to greater-than-Class C low-level waste," in order to distinguish it from the category of greater-than-Class C waste created by the statute.

This distinction is important in understanding the purpose of the Federal Register notice referenced by the comment. The notice was entitled, "Strategy for Management and Disposal of Greater-Than-Class C Low-Level Radioactive Waste (60 FR 13424, March 13, 1995). The notice requested public comments on several options for managing greater-than-Class C waste, including collocated disposal of greater-than-Class C waste and DOE waste with similar characteristics. The notice indicated that this approach presents a regulatory issue. Specifically, Public Law 99-240 requires that greater-than-Class C waste that is generated by the Nuclear Regulatory Commission licensees must be disposed of in Nuclear Regulatory Commission-licensed facilities. DOE-generated waste with similar characteristics does not have to be disposed of in licensed facilities, and there is a question whether the Nuclear Regulatory Commission can exercise jurisdiction over DOE-generated waste without additional legislation.

This issue arises only where co-disposal is considered, and thus it does not affect any current or proposed waste management activities for disposal at the NTS, since co-disposal is not being proposed at this time. If co-disposal ever is proposed, it will be as part of a comprehensive plan for the management of greater-than-Class C low-level waste. As stated in the 1995 notice, implementation of the greater-than-Class C waste provisions of

Public Law 99-240 may not occur for 20 years or more, well beyond the timeframe for this EIS. In the interim, the DOE intends to continue to dispose of DOE waste that is similar to greater-than-Class C waste so long as such waste meets the NTS's waste disposal criteria. The environmental impacts of this activity are addressed in this EIS. Appropriate National Environmental Policy Act documentation will be prepared when federal plans for disposal of greater-than-Class C waste have progressed to the point where a proposal for action can be formulated.

Greater-Than-Class C Waste, Similar to Greater-Than-Class C Waste, and Special Case Waste

The 1995 Federal Register notice discussed above caused one commentor to mistakenly equate greater-than-Class C waste with special case waste. The 1995 notice stated that "[t]he term Special Case Waste (SCW) denotes DOE waste having characteristics similar to those of GTCC LLW [greater-than-Class C low-level waste], and generally lacking firm disposal plans." This statement is an oversimplification of the relationship between these two terms. As discussed above, unlike the term "greater-than-Class C waste," the term "special case waste" is not a formal waste category with well-defined characteristics. The DOE did not intend to suggest that there is always a similarity in the physical or radiological characteristics between special case waste and greater-than-Class C waste (or between special case waste and DOE-generated waste that is similar to greater-than-Class C, for that matter). Not all special case waste is low-level waste, nor is all of it similar to greater-than-Class C waste. Conversely, DOE waste that is similar to greater-than-Class C waste is not special case waste if it meets the NTS's waste disposal criteria (see above). The primary attribute shared by all waste represented by the terms "special case waste" and "greater-than-Class C waste" is that it is "lacking firm disposal plans." In contrast, the DOE can dispose of waste it generates that is similar to greater-than-Class C waste if that waste meets the NTS's waste disposal criteria.

Waste Inappropriate for Shallow Land Disposal, and Special Case Waste

Commentors also incorrectly assumed that these two terms referred to the same waste; in fact, the opposite is true. As these terms are used by the DOE, they are mutually exclusive. As described above, waste is considered special case waste if it has not been determined to meet a disposal site's criteria. Such waste cannot be disposed of at the NTS. In contrast, the DOE applies the term "inappropriate for shallow land disposal" to waste that does meet NTS's disposal criteria, but which the DOE has determined, through the waste acceptance process, to require greater isolation for the protection of the environment and the workers than low-level waste disposal procedures normally would provide. Consistent with the foregoing discussion, these wastes may include DOE waste that is similar to greater-than-Class C waste, or waste that was originally designated by the generator as special case waste.

The two terms do have in common the fact that neither is a formal waste category. Rather, they both are informal management designations that the DOE uses to describe whether a particular waste can meet the NTS's disposal criteria, and whether it requires any measures beyond normal low-level waste disposal procedures to meet those criteria.

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CHAPTER 2
PUBLIC COMMENTS

INTRODUCTION

On February 2, 1996, the U.S. Department of Energy (DOE) issued the Draft NTS EIS for review by the state of Nevada, Indian tribes, local governments, other federal agencies, and the general public. The formal public comment period lasted 90 days, ending on May 3, 1996. Public hearings and workshops were held throughout the comment period at a number of locations in Nevada, and in St. George, Utah. Transcripts of these hearings and workshops were produced to capture oral comments from members of the public. Public comments were received throughout the public comment period and, to accommodate as many respondents as possible, comments were accepted after the close of the public comment period. The last comment was received on May 15, 1996.

2.1 Comment Categories

The comments are presented by source category in the following order:

- Federal Agency
- Sovereign Nations
- State Government
- Municipal Government
- Company
- Organization
- Private Citizen
- Public Hearing Transcript
- Workshop Notes.

The complete transcripts of the public hearings and workshops are presented at the end of the individual comment letters.

2.2 Comment Coding System

Comments are identified by a numeric code to indicate the individual respondents and comment number. Written comments within each comment category are coded in numeric order beginning with the number "1" based on the order they were received and entered into the comment tracking system. Transcripts from public hearings and workshops are coded in a similar manner. Numbers following a hyphen in the comment code indicate an individual comment contained within a letter, transcript, or other comment document. Examples of comment codes are:

- Private Citizen 4-7 refers to the 7th comment from the letter coded 4

- Public Hearing Transcript 2-15 refers to the 15th comment on the Public Hearing Transcript coded 2.

Sidebars in correspondence, transcripts, and other written comment documents indicate the specific lines on which the numbered comment appears. An index to the public comments, as they appear in this document, is provided in the following section. Responses to comments are presented in Chapter 3 of Volume 3 using the same numerical coding system.

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FEDERAL AGENCY 1

United States Department of the Interior

BUREAU OF RECLAMATION
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

LC-2212
ENV-5.00

MAR 14 1996

Dr. Donald R. Elle
Director
Environmental Protection Division
US Department of Energy
Nevada Operations Office
PO Box 14459
Las Vegas, Nevada 89114

Subject: Comments on the 8 Volume EIS for the Nevada Test Site

Reclamation's Lower Colorado Regional Office environmental compliance staff has reviewed the subject documents and find that the proposed actions on lands constituting the Nevada Test Site under the control of the Department of Energy Nevada Operations Office have, in general, no significant impact on Reclamation withdrawn lands and/or facilities. The exceptions to this statement involve the proposed Solar Experimental Facility in the El Dorado Valley that conceivably could require power line rights-of-way and/or other infrastructure improvements that would cross Reclamation withdrawn lands in the vicinity of Boulder City, Nevada. More generally industrial, mining or residential reuse of Nevada Test Site lands could involve use of additional water supplies and/or power requirements that in turn could impact Reclamation projects and/or facilities such as Lake Mead, Hoover Dam and/or the Southern Nevada Water Project. Beyond these indirect and hypothetical impacts the proposed actions and/or alternatives are believed to have no impact on Reclamation lands or activities and hence Reclamation has no objections nor concerns with respect to the proposed actions with respect to the Nevada Test Site.

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Sincerely,

William E. Rinne

William E. Rinne, Office Director
Resource Management and Technical Services

FEDERAL AGENCY 2

The comments in Federal Agency Comment Letter Number 2 were included in Federal Agency Comment Letter Number 3. Therefore, the Department of Interior responses (Fish and Wildlife Service and Bureau of Land Management) to Federal Agency Comment Letter Number 3 also address comments advanced in Federal Agency Comment Letter Number 2.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

APR 12 [illegible]

Memorandum

To: State Director, Bureau of Land Management
Reno, Nevada (Attn: Neil Talbot)

From: Regional Director, U.S. Fish and Wildlife Service
Region 1, Portland, Oregon

Subject: Review of and Comments to Draft Environmental Impact Statement (DEIS) for the Nevada Test Site and Off-Site Locations in the State of Nevada (ER 96/0065)

As directed by acting Director Martin's February 5, 1996, Memorandum from the Office of Environmental Policy and Compliance, we have reviewed on the subject document. Please collate the attached comments in the Department of the Interior response.

Please refer any questions to Ms. Mary Jo Espers of our Reno Field Office at 702/784-5227 or Mr. Merle Richmond of my Regional Office staff at (503) 231-2068.

Thomas Dwyer

Attachment

cc: Field Supervisor, Reno Field Office

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Post Office Box 14459
Las Vegas, Nevada 89114

FEDERAL AGENCY 2 (CONTINUED)

ER 96/0065

Carol M. Borgstrom, Director
Office of Policy and Assistance
U.S. Department of Energy
Attention: SSM PEIS
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Ms. Borgstrom:

The Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the Nevada Test Site and Off-Site Locations in the State of Nevada (Test Site). The following comments are provided for your information and consideration when preparing the Final Environmental Impact Statement (FEIS).

GENERAL COMMENTS

The FEIS should clarify whether or not a programmatic Environmental Impact Statement (EIS) is intended. Some sections indicate further environmental analysis under the National Environmental Policy Act (NEPA) would be done in association with other projects, such as the solar energy proposals. Other sections do not indicate any further analyses would be done for most projects on the Nevada Test Site (NTS). This issue is further complicated by some project activities being currently evaluated under separate EIS's (for example, the Stockpile Stewardship and Waste Management project). Thus, the DEIS uses analytical methods used in both site-specific EIS's and programmatic EIS's referencing other project-specific EIS's. Further, the limited analysis of impacts to biological resources may necessitate a separate environmental analysis for every project to comply with the NEPA. These issues should be clarified in the FEIS.

Terminology and Standards. The DEIS uses technical terms which may be unfamiliar to persons not versed in the fields of nuclear physics or nuclear waste management. Many such terms either are not defined, are defined in technical terms, or have explanations scattered throughout the DEIS. Examples include intrusion scenario, intruder pathway, and total source-term analysis, curie, rem, and others. Such terms should be either defined in the FEIS glossary or when they are used in the text. The definitions should be given in non-technical terms and in language easily understood by the general public. The differences between exposure and breakdown rates and the resulting implications for biological resources need to be explained. The reviewer should be referred to a table that defines the levels of exposure critical for plants and key wildlife species or groups found on the NTS and other affected areas.

FEDERAL AGENCY 2 (CONTINUED)

The DEIS uses general terms which are not defined. Definitions for terms, such as negligible, minor, minimally, localized impacts, slight, moderate, substantial, and significant, should be clearly stated early in the FEIS.

Some sections reference Environmental Protection Agency standards for transuranic wastes. These and other standards should be summarized or referenced to an appendix.

Alternatives. The DEIS has not analyzed the effects of every alternative activity on each resource factor. For example, the evaluation of "Work for Other Impacts" to "Air Quality" does not address rocket motor destruction, even though this activity may release an extensive amount of gases to the atmosphere. The FEIS should provide an evaluation of the effects of every activity on each resource that may be affected.

In Chapter 2, the DEIS provides a cursory overview of NTS programs. Only minimal information is provided on how bulk and packaged low-level waste are disposed. Brief discussions are provided on disposal of low-level wastes in pits and trenches; however, the FEIS should discuss whether wastes are contained or prepared in any manner before they are placed in pits and trenches and covered with soil. This comment relates to the discussions on shallow land radioactive waste disposal, crater disposal, and greater confinement disposal in Chapter 4.

An activity within the Defense Program under Alternative 3 in Chapter 3 calls for construction of a generic, heavy industrial site. The FEIS should discuss what heavy industry would be accommodated. This section also should list rocket motor destruction since this activity is already discussed in the Evaluation of Alternatives Section. Appendix A lists proposed Defense Program tests under Alternative 3; however, what the smoke obscuration operations or thermal and climatic tests may involve needs to be addressed. Each activity to be pursued in Chapter 2 and Appendix A needs to be described in sufficient detail to ensure what is proposed to occur is clear to the uninformed reader.

Preferred Alternative. On March 15, 1996, the Department of Energy (DOE) provided the Fish and Wildlife Service (Service) with a copy of a memorandum on development of the preferred alternative to be presented in the FEIS. The memorandum states the NTS EIS schedule has been modified and the FEIS was scheduled to be released on May 17, 1996. Furthermore, the memorandum states the NTS EIS Technical Working Groups would begin developing the preferred alternative to be presented in the FEIS and this alternative likely would be a hybrid created by selecting specific uses from the alternatives analyzed. Development and approval of the preferred alternative was scheduled for March 28, 1996, and then it would be provided to the DOE headquarters integration team for review and approval. This process implies public and agency comments would not be considered in selecting the preferred alternative or in development of the FEIS. Also, the preferred alternative selection process should be explained in the FEIS.

FEDERAL AGENCY 2 (CONTINUED)

Carol M. Borgstrom, Director
Office of Policy and Assistance

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Contaminants The DEIS does not present an overall evaluation of toxicological (radiological and chemical) impacts to biota resulting from past, present, or future activities. At several points, the DEIS references studies which have been performed on the NTS to address this question. However, the FEIS needs to summarize what is known about past activities, present the impacts related to current activities, and speculate on the potential impact of future activities. Such information is particularly important for the Yucca Flat weapons test basin, Frenchman Flat, Plutonium Valley and other locations in the western and northwestern parts of the facility. Because impacts to wildlife populations have occurred from past and ongoing activities, the FEIS should also provide information on how long radiation could affect wildlife and describe any impacts from other contaminants for each alternative.

Biological Resources Only brief general descriptions of plant communities have been provided in both Chapter 4 Affected Environment and Chapter 5 Environmental Consequences and generally throughout the DEIS. The FEIS needs to address the acres of each plant community that is either currently on the project sites or would be affected by various alternatives. This information is needed for assessing the overall impacts to these communities and their associated wildlife.

The DEIS indicates ephemeral flows occasionally form ponds on several playas found on the NTS. The FEIS should provide information on 1) the length of time this water remains, 2) the extent to which the playas are used by migratory shorebirds, and 3) the potential for migratory birds using the playas to be exposed to radionuclides and other contaminants.

The springs occurring on the NTS may support sedges, rushes, and other hydrophytic vegetation, which likely constitute wetlands that are regulated by the Corps of Engineers (Corps) pursuant to section 404 of the Clean Water Act. Activities that may affect these springs should be described in more detail, and if the springs are to be modified in any way, the potential need for a Corps permit should be stated. We are particularly interested in the potential for such springs to support endemic invertebrates and for alternative 3, which would involve substantial increases in ground water pumping, to affect such invertebrates.

Chapter 5 does not adequately address impacts to biological resources resulting from extensive surface disturbance and removal of native vegetation. Such activities, if done during the avian breeding season, likely would kill individuals and/or destroy nests and nest contents of migratory birds protected under the Federal Migratory Bird Treaty Act. Other activities may expose birds to drilling mud, surfactant in drill sumps constructed for monitoring wells, or other contaminated surface waters. Protected species include, but are not limited to, passerines, waterfowl, hawks, and owls. The FEIS should discuss the resulting impacts, and mitigation measures should included developed to prevent migratory bird mortalities.

FEDERAL AGENCY 2 (CONTINUED)

Carol M. Borgstrom, Director
Office of Policy and Assistance

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Many sections in Chapter 5 state various effects would not have a negative impact on the viability of most species found in this area. Although this is likely true for species overall, the viability of populations may be adversely affected. The effect on viability should be discussed in the FEIS.

Several sections on biological resources in Chapter 5 indicate much of the land to be cleared for the Environmental Restoration Program would be stabilized and/or revegetated. We fully support such measures to restore contaminated sites on NTS. However, the FEIS should discuss the problems associated with clearing vegetation from desert soils. These problems include length of time for the area to revegetate on its own, air quality problems associated with expansive areas of non-vegetated land, and movement of sediments onto adjacent playas that may adversely affect the ecology of the playa. Revegetation of Mojave Desert lands also is problematic. As we are unaware of any successful revegetation that actually restores the native plant community, the FEIS should reference examples and discuss impacts associated with such mitigation measures.

Endangered and Threatened Species In reference to sections on candidate species, the Service no longer maintains a list of category 1 and 2 candidate species (see Notice of Review, dated February 28, 1996, 61 FR 7595). In place of these two categories, a single candidate category has been established. It includes species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list the species as threatened or endangered under the Endangered Species Act of 1973, as amended (ESA). Such species were identified as category 1 candidates in earlier candidate notices of review. Species identified as category 2 candidates in earlier notices of review are no longer regarded as candidates for listing under the new policy.

The Service remains concerned about the former candidate species (now informally known as "Species of Concern"), and recognizes further biological research and field study are needed to resolve the conservation concerns for these taxa. Even though many of these Species of Concern may eventually be found not to warrant listing as threatened or endangered under the ESA, others may become candidates for listing in the future.

Throughout Chapter 5, the DEIS states various candidate plants (now Species of Concern) may be adversely affected by project alternatives. The FEIS needs to provide information on the extent of these plant populations in relation to the status of the species over its range. This information is vital because elimination of a population at a given site, especially if it represents the majority of the population, would be considered a significant impact.

Effects on National Wildlife Refuges We are concerned possible impacts to three components of the National Wildlife Refuge (NWR) System (Ash Meadows, Desert, and Moapa Valley) from current and proposed operations at the NTS have not been adequately addressed. Concerns remain that either contamination or depletion of ground water may

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affect Ash Meadows and/or Moapa Valley (Muddy River) NWRs. The Service understands the underground aquifers feeding the NWRs are not sufficiently understood by geologists or hydrologists to assume adverse impacts would not occur. The FEIS needs to fully address this issue.

Several sections of the FEIS indicate the DOE ground water withdrawals in Yucca Flat have exceeded the published perennial yield. The FEIS should address potential long term implications of this exceedence, particularly for sensitive biological resources in Ash Meadows, Devils Hole, and the Death Valley NWRs. For example, the Ash Meadows NWR supports four fish species, one invertebrate species, and seven plant species which are listed as threatened or endangered and protected by the ESA. Additionally, critical habitat has been designated for these species. Potential impacts to these species and their critical habitat as a result of ground water contamination and how the DOE can coordinate with appropriate land managers to monitor ground water quality which may affect ESA listed species downgradient of the NTS should be discussed.

Potential adverse impacts near the west boundary of the Desert National Wildlife Range from the Spill Test Facility have not been sufficiently addressed. We also are concerned about the proposed transportation routes that would be in close proximity to Ash Meadows and possibly Desert NWRs. These concerns should be addressed in the FEIS.

Some sections of the DEIS indicate impacts to resources on refuges may be minor. Under the Refuge Administration Act of 1966, any activity is prohibited on Service land unless it is specifically approved.

Cumulative Effects The method used to evaluate cumulative effects appears to have evaluated the significance of the DOE's projects instead of the cumulative contribution of the impacts themselves. Therefore, the DOE determines they are an insignificant contributor. The FEIS needs to explain what the contribution of the DOE activities means in terms of total impacts. If activities of other entities result in a close to significant impact in the area, the DOE activities may raise cumulative impacts to a level of significance. The cumulative effects section should be fully reevaluated in the FEIS.

The section on cumulative effects to biological resources also is inadequate. It discusses impacts only to the desert tortoise, and the cumulative effects analyses should be expanded to include other biological resources. They include but are not limited to specific vegetation types, important groups of wildlife such as migratory birds, and species of special concern.

References Although inventories, studies, and effects of various perturbations on physical and biological subjects are referenced throughout the DEIS, few bibliographic references are provided. For example, Section 4.1.4.2, Geology: Radiological Sources in Soil (page 4-135, line 19) refers to a comprehensive study of a contaminated portion of Area 13 of the Nellis

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Air Force Range (NAFR) Complex. Lines 21 and 22 mention research on the uptake of radioactive material by plants, but does not provide a summary and a bibliographic reference. The FEIS needs to provide a reference for determining 1) when, where, and by whom the research was conducted, 2) the validity of the research, and 3) the title of the research document to examine for further information. The FEIS also needs to document sources and references.

SPECIFIC COMMENTS

Page 2-2, Section 2.1, Background, Lines 18-19 A programmatic section 7 consultation under the ESA is in progress. It analyzes the effects on the desert tortoise (*Gopherus agassizii*) from DOE programs on the Nevada Test Site (NTS) as described in Alternative 3 of the DEIS. Activities proposed on the NTS which are not considered in Alternative 3 may not be covered under the biological opinion when issued and may require re-initiation of consultation.

Page 2-21, Section 2.5.6.1, Low-level Waste Performance Assessments, Lines 16-21 Regarding the release of radioactive material, the DEIS states the effective dose equivalent would not exceed 25 millirem per year to any member of the public. Even though the DOE may not have an objective dose limit for plants and wildlife, the FEIS should describe how effective dose equivalent levels for plants and animals would be monitored. The terms "reasonable effort" and "as low as reasonably achievable" in the last sentence should be defined more specifically.

Page 3-36, Section 3.3, Comparison of Alternatives and Environmental Impacts Lines 2 and 3 state additional Defense Program impacts under the alternatives considered in the DEIS are small in comparison to the impacts of previous testing. The implication is that additional impacts would, therefore, be of no concern. However, because the imparts of previous testing were so substantial, it would seem that any additional impact, regardless of how small, may be significant. The FEIS should discuss the rationale why this would not be the case.

Page 4-135, Section 4.1.4.3, Soils, Lines 16-24 Further discussion is needed on the uptake of radioactive material by plants and animals, particularly herbivores. It is reasonable to assume that radioactive material may accumulate in animals which feed on contaminated plants. Thus, the FEIS should discuss long-term effects of radioactive material accumulation in animals in greater detail. For example, is reproduction and recruitment affected by increased radioactive levels and, if so, to what degree? Results of surveys and research projects on soils should be included in the discussion in lines 26-33. We suggest the FEIS identify and discuss alternative methods for cleaning soils, including replacement of topsoil and cryptogamic crusts.

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Page 4-141, Section 4.1.5.1, Surface hydrology. Lines 4-6 states Forty Mile Canyon carries runoff beyond the NTS boundaries to the Amargosa Desert and Death Valley, California. The effect of perturbations on the NTS to organisms of special concern in those locations should be provided in the Biological Resources section.

Page 4-146, Section 4.1.5.1, Surface Hydrology. The DEIS does not explain in lines 6-7 why two of the nine springs on the NTS were not sampled. Considering these springs are a water source for wildlife, the FEIS should identify the potential effects to species which consume water at these sources. A discussion on levels of tritium in the samples and why they were not included in the analysis should be discussed.

Page 4-147, Line 21. The DEIS states all active containment ponds are fenced and posted with radiological warning signs. The FEIS should address the level of access to these ponds by various species of wildlife. We are particularly concerned with access by the threatened desert tortoise and migratory birds. The FEIS should clarify what is meant by the term, "annual average of gross beta analyses" from each sampling location. How does this relate to wildlife that may come into contact with these waters? What is the risk to various wildlife groups, such as amphibians, reptiles, birds, and small mammals. This information which is apparently not in the DEIS, should be provided in the FEIS. These comments relate to lines 31 to 33 on page 4-219, which mention the 230 contaminated areas on the NTS, Tonopah Test Range, and NAFR Complex as well.

Pages 4-149. Lines 27-31 state, in general, the effects of pumping NTS water supply wells is concentrated within a distance of a few thousand feet of the operating wells and that the impact is not considered significant in five locations. The FEIS should state whether there are significant impacts in other locations; whether the cone of depression around these wells have been mapped, or whether there are any biological resources in the vicinity of the wells that could be affected by pumping.

Page 4-150, Section 4.1.5.2, Groundwater. The discussion on lines 17-25 states the downgradient subsurface discharge to Frenchman Flat may have been affected. However, we could not locate any discussion of the impacts to biological resources associated with Frenchman Flat. Such information should be provided in the FEIS.

Page 4-162. Lines 30-32 state when large volumes of ground water were pumped from the vicinity of the Cambric site cavity, migration of tritium and noble gases via ground water flow was possible. However, no information was provided on where contaminated ground water may have gone or where it is now likely to be located. Lines 1 and 2 on page 4-163 state there are three known nuclear test locations where the regional carbonate aquifer has been affected by radionuclides, but no information is provided on the levels of radionuclides

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in these locations or what the potential effects are. Line 20 states that nonradioactive materials in the subsurface at NTS include numerous metals, organic compounds, and drilling products. However, specific identification of these materials and their potential toxic effects, if any, are not listed. This information should be provided in the FFIS.

Page 4-170, Section 4.1.6, Biological Resources, Table 4-36. The bald eagle (*Haliaeetus leucocephalus*) was reclassified to threatened in the lower 48 states on July 12, 1995 (60 Federal Register 36000).

With publication of the new candidate notice, the only category 1 candidate known from the NTS, Beatley's astragalus (*Astragalus beatleyae*) has been removed from the list of candidates. However, as with other species of concern, the Service will continue to track the species' status trends and threats to survival.

Pages 4-174. Lines 3 and 4 state most natural springs are on the mesas and mountains in the northern part of the NTS. If any other springs are located in valley bottoms and are affected by ground water levels, the FEIS should provide this information because current and future pumping of ground water on the NTS may affect these springs.

Page 4-175. Lines 7-9 state many of the birds on the NTS, including almost all of the waterfowl and shorebirds, use the playas in Frenchman and Yucca Flat weapons test basin, artificial ponds and springs, and sewage lagoons during migration and/or during winter. No information is provided, however, on whether data has been collected on exposure of these organisms to radionuclides or other contaminants and the potential effects therefrom. This information should be provided in the FEIS.

Pages 4-220 and 221. The section on ecological studies mention monitoring plants and animals on the NTS to assess changes over time in their ecological conditions. However, no information is provided on the results of these studies and no documents or study reports are referenced. The FEIS should summarize the results of these studies as specified in section 1502.21 in the Council on Environmental Quality's Regulations for Implementing the NEPA (CEQ Regulations).

Page 4-221, Section 4.1.11, Occupational and Public Health and Safety/Radiation, Lines 3-5. The discussion of the tortoises in the Rock Valley study enclosure should include the determination by the Service that these tortoises are considered pre-ESA and, therefore, not protected under the ESA. When hatchlings, these tortoises were confined to the enclosures by a barrier and isolated from the wild population. This event occurred prior to listing of the tortoise under the ESA. However, marking and measuring free-roaming tortoises may be in violation of section 9 of the ESA unless authorized under sections 7 or 10.

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Page 4-278, Section 4.5, Eldorado Valley. The Eldorado Valley Land Act, Public Law 85-339 as amended, authorized the conveyance of 126,775 acres of Bureau of Land Management lands in the Eldorado Valley to the Colorado River Commission of Nevada. In 1995, 107,412 acres of these lands, which includes 69,930 acres of the Piute-Eldorado Critical Habitat Unit (CHU) for the desert tortoise, were transferred to the Boulder City government. Furthermore, approximately 85,617 acres of the transferred lands, including 65,256 acres of desert tortoise critical habitat, are being managed according to a conservation easement granted by Boulder City to Clark County for at least the next 50 years. The conservation easement requires that the 85,617 acres of land be managed for the conservation, protection, restoration, and enhancement of the desert tortoise and its habitat. Boulder City is responsible for supervising and regulating activities authorized or permitted within the area. This information should be incorporated into the FEIS.

Page 4-287, Section 4.5.6, Biological Resources. The Eldorado Valley Solar Enterprise Zone occurs immediately adjacent to the Piute-Eldorado CHU and is occupied by desert tortoise. The Dry Lake Valley Solar Enterprise Zone is immediately adjacent to the Mormon Mesa CHU and the Coyote Springs Solar Enterprise Zone occurs within the Mormon Mesa CHU. If any proposed project actions in these areas affect the desert tortoise, formal consultation with the Service under section 7 of the ESA may be required.

Page 5-37, Section 5.1.1.5.2, Groundwater. The FEIS should further discuss potential adverse impacts to biological resources from large scale ground water withdrawals. In particular, project effects to hydrophytic vegetation, aquatic invertebrates, and desert organisms dependent on isolated water sources where spring discharge rates would be reduced and water quality impaired should be identified.

Line 33 of this section states that the grading of soils and other construction actions could alter slightly the quantity and quality of runoff. However, the significance of the impact would depend in part on the amount of grading that was done. Alterations of drainages, including those on alluvial fans, may significantly alter downgradient vegetation, including plant species composition and abundance associated with these communities. These impacts should be discussed in the FEIS.

Pages 5-161 to 5-166, Section 5.3.1.6, Biological Resources. Regarding the alternative energy project proposed under the Non-defense Research and Development Program, we understand additional environmental analysis would be undertaken before a decision would be made on this proposed project. However, some project features and potential impacts should be discussed in the FEIS. The discussion should also include the four technologies being considered for development, the types of habitat to be cleared, and the potential for indirect impacts, such as habitat fragmentation and disruption of wildlife movement corridors.

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Page 5-282, Section 5.5.3.6, Coyote Springs Valley, Lines 23-25. The proposal for pumping and use of any ground water upgradient from the Muddy River warm springs system should be re-evaluated because the Moapa dace and several species of special concern may be impacted. If pumping may adversely affect any listed species, consultation pursuant to section 7 of the ESA may be required.

Volume 1, Appendix I, Transportation Study, Page 3-23, Figure 3-11. Regarding State Route NV-10 Southern Route 5, we object to this route due to its proximity to Ash Meadows NWR which provides critical habitat for numerous listed species. Also, State Route 373 is not a heavy haul road.

Appendix C, Page C-10, National Wildlife Refuge System Administration Act of 1966, 42 U.S.C. 668dd, (Public Law 91-135, as amended). The following text should be added in the FEIS to reflect the intent of this law:

> The National Wildlife Refuge System Administration Act of 1966 provides guidelines and directives for the administration and management of all lands within the system, including "wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas." The Secretary of Interior is authorized to permit by regulations the use of any area within the system provided "such uses are compatible with the major purposes for which such areas were established."

Migratory Bird Treaty Act of 1918, 16 U.S.C. 703 et seq., 40 Stat. 755. The following text should be added in the FEIS to more accurately reflect the intent of this law:

> The Migratory Bird Treaty Act of 1918 establishes a prohibition, unless permitted by regulation, to "pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess... at any time, or in any manner, any migratory bird, included in the terms of this Convention ... for the protection of migratory birds ..., or any part, nest, or egg of any such bird."

Bald and Golden Eagle Protection Act, 16 U.S.C. 668, enacted by 54 Stat. 250. The proper name of this law is the "Bald Eagle Protection Act of 1940." The Service recommends the following text to more accurately reflect the intent of this law:

> The Bald Eagle Protection Act of 1940 protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act.

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Appendix E, Section E.2.6, Page E-19 to E-25, Biological Resources: The criteria established to evaluate potential impacts resulting from the various activities should include an evaluation of the DOE's legal responsibilities under the Migratory Bird Treaty Act (MBTA) or the Bald Eagle Protection Act (BEPA) in the FEIS. While evaluating impacts to habitat, populations, and individuals of threatened or endangered species is proper, the MBTA and BEPA provide protection to individuals of these species.

Volume 2, Framework for Resource Management Plan, Page 1-2, Section 1.3, Policy and Procedures: Section 7(a)(1) of the ESA requires all Federal agencies to carry out programs for the conservation of threatened and endangered species. Many Federal agencies also have policies for conservation and management of candidate species, species of special concern, and other sensitive species. If the DOE has such policies, they should be discussed or a statement should be given in the FEIS that no such policies exist.

Page 4-6: The DEIS states the DOE's goal for biological resources is to maintain habitat and ecosystem processes needed to support viable populations of all native plants and animals. However, the status, distribution, and life histories of many species of plants and wildlife are not well known. Thus, the implementation of a project activity, such as an increase in land use, could be underestimated and have a long term impact beyond acceptable levels. Guidelines should be incorporated into the Resource Management Plan to adequately conserve all natural resources on the NTS.

Page 2-7, Line 14: The taxonomic name for Beatley milkvetch is *Astragalus beatleyae* and not *Astragalus badly*. This should be corrected in the FEIS.

Thank you for the opportunity to comment.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

FEDERAL AGENCY 3

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
[illegible]

April 24, 1996

ER 96/0065

Carol M. Borgstrom, Director
Office of Policy and Assistance
U.S. Department of Energy
Attention: SIM PEIS
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Ms. Borgstrom:

The Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the Nevada Test Site and Off-Site Locations in the State of Nevada (Test Site). The following comments are provided for your information and consideration when preparing the Final Environmental Impact Statement (FEIS).

General Comments

The Test Site is comprised of public lands withdrawn by the Secretary of the Interior, who has continuing responsibilities at the Test Site, for a specific use. The original order (PLO No. 805) withdrew lands for weapons testing. Prior to the 1992 moratorium, nuclear weapons testing was the Test Site's primary mission.

The draft EIS acknowledges that other activities are now taking place and expansion of other activities is being considered. A substantial change in use would require a new withdrawal. The same is true for the public land orders that withdrew public land for the Shoal Project and the Central Nevada Test Area.

1

This Draft EIS discusses activities which have occurred, are occurring now, and which may occur in future at the Test Site. Since an EIS is prepared for a specific purpose/project, the purpose of this draft EIS is not clear. It does not address need to change the four public land orders which established the Test Site.

2

It has long been the practice of the Department of the Interior to specify the use and the administering agency when withdrawing land. Prior to the Federal Land Policy and Management Act of

FEDERAL AGENCY 3 (CONTINUED)

1976, there were various authorities to make withdrawals. Each authority was for a specific use or purpose.
For uses where there was no specific authority, the Supreme Court has recognized the inherent power of the President, as delegated to the Secretary of the Interior, to withdraw lands for public purposes (United States v. Midwest Oil Co., 236 U.S. 459; Mason v. United States, 260 U.S. 545). The Test Site was withdrawn by the inherent power of the President. Withdrawals are made for the use and benefit of the public at large.

The Bureau of Land Management will not accept contaminated lands from DOE. Clean up/remediation levels have not been established for nuclear activities where land was intentionally contaminated "as a national security sacrifice zone" during the cold war. BLM does not have financial resources or radiological expertise on hand to continue remediation and monitoring at DOE sites.

3 Remediation and restoration of DOE's facilities are to be coordinated with BLM as the majority of these sites are adjacent to BLM managed public lands. Any restoration activities that identify releases or contamination off-site which impact or threaten to impact BLM managed lands should be brought to the immediate attention of BLM.

4 Discussions of the Shoal and Central Nevada Test Area cover groundwater contamination. The EIS indicates that recent field studies revealed a higher probability of contaminant migration than previously assumed at the Central Nevada Test Area.

This is insufficient information from which to draw appropriate conclusions or recommendations. Monitoring contamination is not remediation. Since the sites are permanently contaminated, monitoring is a commitment to infinity or until a new, unknown technology to remediate these sites is discovered.

5 If monitoring shows contamination beyond the withdrawal boundaries, expansion of the withdrawal areas should be re-evaluated.

6 Recent studies by USGS at the Beatty facility indicate that a tritium and carbon 14 soil gas plume is moving at a greater rate than groundwater contamination. What are you doing to address this issue at all or these sites? Are the monitoring methods and existing well networks being adjusted to address this issue?

7 We recommend this issue be addressed for those sites where soil gas migration could easily impact BLM managed lands such as Shoal and the Central Nevada Test Area. If such a plume is detected, BLM is to be notified, and either remediation plans or re-evaluation of withdrawal boundaries will be required.

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Any of the proposed offsite activities should be addressed on an eco-regional basis due to the surface disturbance and water needs. Each basin in Nevada has unique ecological diversity wherein disturbances can permanently alter the fragile balance found in the great basin and mojave deserts.

If you have questions contact Dennis Samuelson at 702-785-6532 or Sue Skinner at (702-785-6570), at the Bureau of Land Management Nevada State Office, Reno, Nevada.

Specific Comments

Executive Summary

8 **Page S-13, lines 37-38**, describe Coyote Springs Valley Region as a "designated wilderness management area" by BLM. This region has some areas managed by BLM as wilderness until such time as Congress designates them as wilderness or releases them for other uses. None of the study areas has, to date, been designated by Congress as wilderness. (contact Dawna Ferris, BLM Caliente Field Station, 702-726-8129)

Volume 1, Chapters 1-9, Part A Chapter 4.0, Affected Environment

9 **Page 4-9, Section 4.1.1.1 Public Land Orders and Withdrawals, line 13** - How was the management of the area withdrawn by Public Land Order (PLO) No. 1662 delegated to the Air Force? BLM records show PLO 1662 still in effect with DOE as the administering agency.

10 **Page 4-9, Section 4.1.1.1 Public Land Orders and Withdrawals, entire section** - At the time the 1983 withdrawal review was conducted, weapons testing was the primary use. However, this review was never forwarded to the Secretary of the Interior and to Congress in accordance with Section 204(l) of the Federal Land Policy and Management Act of 1976. (As a matter of fact, no review of any withdrawal, regardless of agency, has been forwarded to Congress as mandated).

11 Consequently, this review needs to be updated. The 100-year term was based on the fact that if nuclear weapons testing were to cease, the lands would remain withdrawn for public health and safety reasons due to contamination.

12 **Page 4-227, Section 4.2 Tonopah Test Range, line 3** - Should the 624 acres be 624 square miles? See section 4.2.1.1

13 **Page 4-228, Section 4.2.1.1 Public Land Orders and Withdrawals, entire section** - The lands comprising the Tonopah Test Range are within the Nellis Range Complex. The

FEDERAL AGENCY 3 (CONTINUED)

13 cont. Nellis Range was re-withdrawn by Public Law 99-606 in 1986. This withdrawal expires in 2001, unless it is extended by Congress.

14 **Page 4-251, Section 4.3, Project Shoal Area, lines 30-31** - The statement, "The site was released by the Atomic Energy Commission to the U.S. Bureau of Land Management in 1970 (DOE, 1988)" is not accurate; it should be deleted. The withdrawal is still in place and BLM has determined through the withdrawal review process that we will not take this site back due to the contamination and liability issue.

15 **Page 4-252, line 13** - There are no public highways on the Shoal site as such; the area is crossed by numerous roads frequently used by the public for access to surrounding public lands.

16 **Page 4-252, Section 4.3.1.1 Public Land Orders and Withdrawals, entire section** - BLM records show that the Project Shoal area was withdrawn by the Secretary of the Interior on September 6, 1962, under PLO No. 2771 (2,560 acres). This order is still in effect.

17 All special land use permits have expired or have been cancelled. We have no record of special land use permit being extended to the year 2007 **(page 4-254, lines 3 & 4)**. The BLM would like to see a copy of this permit.

18 Since passage of the Federal Land Policy and Management Act of 1976, special land use permits can no longer be issued to Federal agencies for use of public lands. Use of public lands by Federal agencies can only be authorized by withdrawal, right-of-way, or cooperative agreement.

19 **Page 4-254, Section 4.3.1.2 Land Use Designations, lines 15-16** - The southeast corner of the Shoal site is not Navy reservation. The Shoal site is withdrawn for use by the DOE.

20 **Page 4-263, Section 4.3.10 Cultural Resources, line 23** - Where does the figure 7,404 acres come from? The withdrawal for the Shoal site is for 2,560 acres.

21 **Page 4-266, Section 4.4.1.1 Public Land Orders and Withdrawals, entire section** - BLM records show that the Central Nevada Test Area was withdrawn by the Secretary of the Interior on December 6, 1967, under PLO No. 4338. This 640-acre withdrawal was for Project Faultless detonation site. The Secretary of the Interior also withdrew two additional parcels on December 12, 1969, under PLO No. 4748 (1,920 acres). These two orders are still in effect.

22 In 1984, as result of a BLM review, DOE indicated these withdrawals should be continued. All special land use permits have expired or have been cancelled. A portion of the Central Nevada Test Area is now within the Toiyabe National Forest.

FEDERAL AGENCY 3 (CONTINUED)

23 **Page 4-278, Section 4.5 Eldorado Valley, lines 31 to 33** - On July 9, 1995, 107,412.24 acres were patented to the State of Nevada. The State subsequently transferred the lands to Boulder City.

Volume I, Chapters 1-9, Part B

Chapter 5.0, Environmental Consequences

24 **Nevada Test Site** - Under Alternatives 3 & 4, there would be a substantial change in use at the Test Site, which would require a new withdrawal. This was the case with the Department of Energy WIPP site in New Mexico (State of New Mexico v. Watkins, No. 81-5387, D.C. Cir.). The court held that a change in use requires a **new** withdrawal. (Alternatives 1 & 2 may also be a change in use, but further analysis is needed).

25 **Project Shoal Area and Central Nevada Test Area** - Under all four alternatives, all activities would have to be confined to the withdrawn areas. If additional lands are needed, a right-of-way, withdrawal, or cooperative agreement would be required.

26 **Eldorado Valley, Dry Lake Valley, and Coyote Springs** - If any public lands are needed for the solar enterprise zones, a right-of-way, withdrawal, or cooperative agreement would be required.

27 **Alternative 2 - Discontinue Operations** - This does not seem to be a viable alternative. In essence, DOE would be "walking away" from the Test Site, Shoal, and the Central Nevada Project. (The Tonopah Test Range would still remain part of the Air Force Nellis Range). These are withdrawn public lands. The BLM does not want the lands back unless they can be cleaned of all contamination.

29 DOE acknowledges that they would maintain control of the Test Site under this alternative, but nothing is mentioned about Shoal and Central Nevada Project except for "monitoring activities." DOE remains responsible for the withdrawn lands at all these sites.

30 **Page 5-81, lines 10-11** - The Navy does not have authorization for military maneuvers from the BLM nor does DOE have the authority to allow the Navy to use the area. The Navy cannot use the area for maneuvers. Navy needs its own withdrawal.

GENERAL COMMENTS

31 The FEIS should clarify whether a programmatic Environmental Impact Statement (EIS) will be prepared. Some sections indicate further environmental analyses under the National Environmental

FEDERAL AGENCY 3 (CONTINUED)

Policy Act (NEPA) would be done in association with other projects, such as solar energy proposals.

Other sections do not indicate any further analyses for most projects on the Nevada Test Site (NTS). This issue is further complicated by some project activities being currently evaluated under separate EIS's (for example, the Stockpile Stewardship and Waste Management project).

32 Further, the limited analysis of impacts to biological resources may necessitate a separate environmental analysis for each project to comply with NEPA. These issues should be clarified in the FEIS.

33 Terminology and Standards The DEIS uses technical terms which may be unfamiliar to persons not versed in the fields of nuclear physics or nuclear waste management. Many such terms either are not defined, are defined in technical terms, or have explanations scattered throughout the DEIS.

Examples include intrusion scenario, intruder pathway, and total source-term analysis, curie, rem, and others. Such terms should be either defined in the FEIS glossary, or when they are used in the text. The definitions should be given in non-technical terms and in language easily understood by the general public.

34 The differences between exposure and breakdown rates and the resulting implications for biological resources need to be explained. The reviewer should be referred to a table that
35 defines levels of exposure critical for plants and key wildlife species or groups found on the NTS and other affected areas.

36 The DEIS uses general terms which are not defined. Definitions for terms, such as negligible, minor, minimally, localized impacts, slight, moderate, substantial, and significant, should be clearly stated early in the FEIS.

37 Some sections reference Environmental Protection Agency standards for transuranic wastes. These and other standards should be summarized or referenced in an appendix.

38 Alternatives The DEIS has not analyzed the effects of every alternative activity on each resource factor. For example, the evaluation of "Work for Other Impacts" to "Air Quality" does not address rocket motor destruction, even though this activity may
39 release an extensive amount of gases to the atmosphere. The FEIS should provide evaluation of effects of every activity on each resource that may be affected.

In Chapter 2, the DEIS provides a cursory overview of NTS programs. Only minimal information is provided on how bulk and packaged low-level wastes are disposed. Brief discussions are provided on disposal of low-level wastes in pits and trenches;

FEDERAL AGENCY 3 (CONTINUED)

40 however, the FEIS should discuss whether wastes are contained or prepared in any manner before they are placed in pits and trenches and covered with soil.

This comment relates to the discussions of shallow land radioactive waste disposal, crater disposal, and greater confinement disposal in Chapter 4.

41 An activity within the Defense Program under Alternative 3 in Chapter 3 calls for construction of a generic, heavy industrial site. The FEIS should discuss what heavy industry would be accommodated. This section also should list rocket motor
42 destruction since this activity is already discussed in the Evaluation of Alternatives Section.

43 Appendix A lists proposed Defense Program tests under Alternative 3; however, what the smoke obscuration operations or thermal and climatic tests may involve needs to be addressed. Each activity
44 to be pursued in Chapter 3 and Appendix A needs to be described in sufficient detail to ensure what is proposed to occur is clear to the uninformed reader.

Preferred Alternative On March 15, 1996, the Department of Energy (DOE) provided the Fish and Wildlife Service (Service) with copy of a memorandum concerning development of the preferred alternative to be presented in the FEIS.

This memorandum states the NTS EIS schedule had been modified and the FEIS was scheduled to be released on May 17, 1996. Furthermore, the memorandum states the NTS EIS Technical Working Groups would begin developing the preferred alternative to be presented in the FEIS and this alternative likely would be a hybrid created by selecting specific uses from the alternatives analyzed.

Development and approval of the preferred alternative was scheduled for March 28, 1996, after which it would be provided to DOE headquarters integration team for review and approval. This
45 process implies public and agency comments would not be considered in selecting the preferred alternative or in development of the
46 FEIS. The preferred alternative selection process should be explained in the FEIS.

47 Contaminants The DEIS does not present an overall evaluation of toxicological (radiological and chemical) impacts to biota resulting from past, present, or future activities. At several points, the DEIS references studies which have been performed on the NTS to address this question.

48 However, the FEIS needs to summarize what is known about past activities, present the impacts related to current activities, and project potential impact of future activities. Such information

FEDERAL AGENCY 3 (CONTINUED)

is particularly important for the Yucca Flat weapons test basin, Frenchman Flat, Plutonium Valley and other locations in the western and northwestern parts of the facility.

49 Because impacts to wildlife populations have occurred from past and ongoing activities, the FEIS should also provide information on how long radiation could affect wildlife and describe any impacts from other contaminants for each alternative.

Biological Resources Only brief general descriptions of plant communities have been provided in both Chapter 4 Affected Environment and Chapter 5 Environmental Consequences and generally throughout the DEIS. The FEIS needs to address the acres of each 50 plant community that is either currently on the project sites or would be affected by various alternatives. This information is needed for assessing the overall impacts to these communities and their associated wildlife.

The DEIS indicates ephemeral flows occasionally form ponds on several playas found on the NTS. The FEIS should provide information on 1) the length of time this water remains, 2) the 51 extent to which the playas are used by migratory shorebirds, and 3) the potential for migratory birds using the playas to be exposed to radionuclides and other contaminants.

The springs occurring on the NTS may support sedges, rushes, and 52 other hydrophytic vegetation, which likely constitute wetlands that are regulated by the U.S. Army Corps of Engineers (Corps) pursuant to section 404 of the Clean Water Act. Activities that 53 may affect these springs should be described in more detail, and if the springs are to be modified in any way, the potential need for a Corps permit should be stated.

54 We are particularly interested in the potential for such springs to support endemic invertebrates and for alternative 3, which would involve substantial increases in groundwater pumping, to affect such invertebrates.

55 Chapter 5 does not adequately address impacts to biological resources resulting from extensive surface disturbance and removal of native vegetation. Such activities, if done during the avian breeding season, likely would kill individuals and/or destroy nests and nest contents of migratory birds protected under the Federal Migratory Bird Treaty Act.

Other activities may expose birds to drilling mud, surfactant in drill sumps constructed for monitoring wells, or other contaminated surface waters. Protected species include, but are 56 not limited to, passerines, waterfowl, hawks, and owls. The FEIS should discuss the resulting impacts, and mitigation measures should be developed to prevent migratory bird mortalities.

FEDERAL AGENCY 3 (CONTINUED)

57 Many sections in Chapter 5 state various effects would not have a negative impact on the viability of most species found in this area. Although this is likely true for species overall, the viability of populations may be adversely affected. The effect on viability should be discussed in the FEIS.

Several sections on biological resources in Chapter 5 indicate much of the land to be cleared for the Environmental Restoration Program would be stabilized and/or revegetated. We fully support such measures to restore contaminated sites on NTS. However, the FEIS should discuss the problems associated with clearing vegetation from desert soils.

58 These problems include length of time for the area to revegetate on its own, air quality problems associated with expansive areas of non-vegetated land, and movement of sediments onto adjacent playas that may adversely affect the ecology of the playa. Revegetation of Mojave Desert lands also is problematic. As we 59 are unaware of any successful revegetation that actually restores the native plant community, the FEIS should reference examples and discuss impacts associated with such mitigation measures.

Endangered and Threatened Species In reference to sections on 60 candidate species, the Service no longer maintains a list of category 1 and 2 candidate species (see Notice of Review, dated February 28, 1996, 61 FR 7595).

In place of these two categories, a single candidate category has been established. It includes species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list the species as threatened or endangered under the Endangered Species Act of 1973, as amended (ESA).

Such species were identified as category 1 candidates in earlier 61 candidate notices of review. Species identified as category 2 candidates in earlier notices of review are no longer regarded as candidates for listing under the new policy.

The Service remains concerned about the former candidate species (now informally known as "Species of Concern"), and recognizes further biological research and field study are needed to resolve the conservation concerns for these taxa. Even though many of these Species of Concern may eventually be found not to warrant listing as threatened or endangered under the ESA, others may become candidates for listing in the future.

62 Throughout Chapter 5, the DEIS states various candidate plants (now Species of Concern) may be adversely affected by project alternatives. The FEIS needs to provide information on the extent of these plant populations in relation to the status of the species over its range.

FEDERAL AGENCY 3 (CONTINUED)

63 This information is vital because elimination of a population at a given site, especially if it represents the majority of the population, would be considered a significant impact.

64 Effects on National Wildlife Refuges We are concerned possible impacts to three components of the National Wildlife Refuge (NWR) System (Ash Meadows, Desert, and Moapa Valley) from current and proposed operations at the NTS have not been adequately addressed.

65 Concerns remain that either contamination or depletion of groundwater may affect Ash Meadows and/or Moapa Valley (Muddy River) NWRs. The Service understands the underground aquifers feeding the NWRs are not sufficiently understood by geologists or hydrologists to assume adverse impacts would not occur. The FEIS needs to fully address this issue.

66 Several sections of the FEIS indicate DOE groundwater withdrawals in Yucca Flat have exceeded the published perennial yield. The FEIS should address potential long-term implications of this exceedence, particularly for sensitive biological resources in Ash Meadows, Devils Hole, and the Death Valley NWRs.

67 For example, the Ash Meadows NWR supports four fish species, one invertebrate species, and seven plant species which are listed as threatened or endangered and protected by the ESA. Additionally, critical habitat has been designated for these species.

Potential impacts to these species and their critical habitat as a result of groundwater contamination and how DOE can coordinate with appropriate land managers to monitor groundwater quality which may affect ESA listed species downgradient of the NTS should be discussed.

68 Potential adverse impacts near the west boundary of the Desert National Wildlife Range from the Spill Test Facility have not been sufficiently addressed. We also are concerned about the proposed

69 transportation routes that would be in close proximity to Ash Meadows and possibly Desert NWRs. These concerns should be addressed in the FEIS.

70 Some sections of the DEIS indicate impacts to resources on refuges may be minor. Under the Refuge Administration Act of 1966, any activity is prohibited on Service land unless it is specifically approved.

Cumulative Effects The method used to evaluate cumulative effects appears to have evaluated the significance of DOE's projects instead of the cumulative contribution of the impacts themselves. Therefore, DOE determines they are an insignificant contributor.

71 The FEIS needs to explain what the contribution of DOE activities means in terms of total impacts. If activities of other entities result in a close-to-significant impact in the area, DOE activities may raise cumulative impacts to a level of

FEDERAL AGENCY 3 (CONTINUED)

71 (cont.) significance. The cumulative effects section should be fully reevaluated in the FEIS.

72 The section on cumulative effects to biological resources also is inadequate. It discusses impacts only to the desert tortoise, and the cumulative effects analyses should be expanded to include other biological resources.

They include but are not limited to specific vegetation types, important groups of wildlife such as migratory birds, and species of special concern.

73 References Although inventories, studies, and effects of various perturbations on physical and biological subjects are referenced throughout the DEIS, few bibliographic references are provided.

For example, Section 4.1.4.2, Geology: Radiological Sources in Soil (page 4-135, line 19) refers to a comprehensive study of a

74 contaminated portion of Area 11 of the Nellis Air Force Range (NAFR) Complex. Lines 21 and 22 mention research on the uptake of radioactive material by plants, but do not provide a summary and a bibliographic reference.

75 The FEIS needs to provide a reference for determining 1) when, where, and by whom the research was conducted, 2) the validity of the research, and 3) the title of the research document to examine for further information. The FEIS also needs to document sources

76 and references.

SPECIFIC COMMENTS

77 Page 2-2, Section 2.1, Background, Lines 18-19 A programmatic section 7 consultation under the ESA is in progress. It analyzes the effects on the desert tortoise (Gopherus agassizii) from DOE programs on the Nevada Test Site (NTS) as described in Alternative 3 of the DEIS. Activities proposed on the NTS which are not considered in Alternative 3 may not be covered under the biological opinion when issued and may require re-initiation of consultation.

78 Page 2-21, Section 2.5.6.1, Low-level Waste Performance Assessments, Lines 16-21 Regarding the release of radioactive material, the DEIS states the effective dose equivalent would not exceed 25 millirems per year to any member of the public. Even though DOE may not have an objective dose limit for plants and wildlife, the FEIS should describe how effective dose equivalent levels for plants and animals would be monitored.

79 The terms "reasonable effort" and "as low as reasonably achievable" in the last sentence should be defined more specifically.

FEDERAL AGENCY 3 (CONTINUED)

Page 3-16, Section 3.3, Comparison of Alternatives and Environmental Impacts Lines 2 and 3 state additional Defense Program impacts under the alternatives considered in the DEIS are small in comparison to the impacts of previous testing. The implication is that additional impacts would, therefore, be of no concern. However, because the impacts of previous testing were so substantial, it would seem that any additional impact, regardless of how small, may be significant. The FEIS should discuss the rationale why this would not be the case. 80

Page 4-135, Section 4.1.4.3, Soils, Lines 16-24 Further discussion is needed on the uptake of radioactive material by plants and animals, particularly herbivores. It is reasonable to assume that radioactive material may accumulate in animals which feed on contaminated plants. Thus, the FEIS should discuss long-term effects of radioactive material accumulation in animals in greater detail. 81 82

For example, is reproduction and recruitment affected by increased radioactive levels and, if so, to what degree? Results of surveys and research projects on soils should be included in the discussion in lines 26-33. We suggest the FEIS identify and discuss alternative methods for cleaning soils, including replacement of topsoil and cryptogamic crusts. 83 84 85

Page 4-141, Section 4.1.5.1, Surface Hydrology Lines 4-8 states Forty Mile Canyon carries runoff beyond the NTS boundaries to the Amargosa Desert and Death Valley, California. The effect of perturbations on the NTS to organisms of special concern in those locations should be provided in the Biological Resources sections. 86

Page 4-146, Section 4.1.5.1, Surface Hydrology The DEIS does not explain in lines 6-7 why two of the nine springs on the NTS were not sampled. Considering these springs are a water source for wildlife, the FEIS should identify the potential effects to species which consume water at these sources. A discussion on levels of tritium in the samples and why they were not included in the analysis should be discussed. 87 88 89

Page 4-147, Line 21 The DEIS states all active containment ponds are fenced and posted with radiological warning signs. The FEIS should address the level of access to these ponds by various species of wildlife. We are particularly concerned with access by the threatened desert tortoise and migratory birds. 90

The FEIS should clarify what is meant by the term, "annual average of gross beta analyses" from each sampling location. How does this relate to wildlife that may come into contact with these waters? What is the risk to various wildlife groups, such as amphibians, reptiles, birds, and small mammals? 91 92

This information which is apparently not in the DEIS, should be provided in the FEIS. These comments relate to lines 11 to 33 on

FEDERAL AGENCY 3 (CONTINUED)

page 4-219, which mention 230 contaminated areas on the NTS, Tonopah Test Range, and NAFR Complex.

Pages 4-149 Lines 27-31 state, in general, the effects of pumping NTS water supply wells is concentrated within a distance of a few thousand feet of the operating wells and that the impact is not considered significant in five locations. 93

The FEIS should state whether there are significant impacts in other locations; whether the cone of depression around these wells has been mapped, or whether there are any biological resources in the vicinity of the wells that could be affected by pumping.

Page 4-150, Section 4.1.5.2, Groundwater The discussion on lines 17-25 states the downgradient subsurface discharge to Frenchman Flat may have been affected. However, we could not locate any discussion of the impacts to biological resources associated with Frenchman Flat. Such information should be provided in the FEIS. 94

Page 4-162 Lines 30-32 state when large volumes of groundwater were pumped from the vicinity of the Cambric site cavity, migration of tritium and noble gases via groundwater flow was possible. However, no information was provided on where contaminated groundwater may have gone or where it is now likely to be located. 95

Lines 1 and 2 on page 4-163 state there are three known nuclear test locations where the regional carbonate aquifer has been affected by radionuclides, but no information is provided on the levels of radionuclides in these locations or what the potential effects are. 96

Line 20 states that nonradioactive materials in the subsurface at NTS include numerous metals, organic compounds, and drilling products. However, specific identification of these materials and their potential toxic effects, if any, are not listed. This information should be provided in the FEIS. 97

Page 4-170, Section 4.1.6, Biological Resources, Table 4-30 The bald eagle (*Haliaeetus leucocephalus*) was reclassified to threatened in the lower 48 states on July 12, 1995 (60 Federal Register 36000). 98

With publication of the new candidate notice, the only category 1 candidate known from the NTS, Beatley's astragalus (*Astragalus beatleyae*) has been removed from the list of candidates. However, as with other species of concern, the Service will continue to track the species' status trends and threats to survival. 99

Pages 4-174 Lines 3 and 4 state most natural springs are on the mesas and mountains in the northern part of the NTS. If any other springs are located in valley bottoms and are affected by groundwater levels, the FEIS should provide this information 100

FEDERAL AGENCY 3 (CONTINUED)

because current and future pumping of groundwater on the NTS may affect these springs.

101 Page 4-175 Lines 7-9 state many of the birds on the NTS, including almost all of the waterfowl and shorebirds, use the playas in Frenchman and Yucca Flat weapons test basin, artificial ponds and springs, and sewage lagoons during migration and/or during winter.
No information is provided, however, on whether data have been collected on exposure of these organisms to radionuclides or other contaminants and potential effects therefrom. This information should be provided in the FEIS.

102 Pages 4-220 and 221 The section on ecological studies mentions monitoring plants and animals on the NTS to assess changes over time in their ecological conditions. However, no information is provided on the results of these studies and no documents or study reports are referenced.

The FEIS should summarize results of these studies as specified in section 1502.21 in the Council on Environmental Quality's Regulations for Implementing the NEPA (CEQ Regulations).

103 Page 4-221, Section 4.1.11, Occupational and Public Health and Safety/Radiation, Lines 3-5. The discussion of tortoises in the Rock Valley study enclosure should include the determination by the Service that these tortoises are considered pre-ESA and, therefore, not protected under the ESA. When hatchlings, these tortoises were confined to the enclosures by a barrier and isolated from the wild population. This event occurred prior to

104 listing of the tortoise under the ESA. However, marking and measuring free-roaming tortoises may be in violation of section 9 of the ESA unless authorized under sections 7 or 10.

Page 4-278, Section 4.5, Eldorado Valley The Eldorado Valley Land Act, Public Law 85-339 as amended, authorized the conveyance of 126,775 acres of Bureau of Land Management lands in the Eldorado Valley to the Colorado River Commission of Nevada.

In 1995, 107,412 acres of these lands, which include 69,930 acres of the Piute-Eldorado Critical Habitat Unit (CHU) for the desert tortoise, were transferred to the Boulder City government.

105 Furthermore, approximately 85,617 acres of the transferred lands, including 65,256 acres of desert tortoise critical habitat, are being managed according to a conservation easement granted by Boulder City to Clark County for at least the next 50 years. The conservation easement requires that the 85,617 acres of land be managed for the conservation, protection, restoration, and enhancement of the desert tortoise and its habitat.

FEDERAL AGENCY 3 (CONTINUED)

105 cont. Boulder City is responsible for supervising and regulating activities authorized or permitted within the area. This information should be incorporated into the FEIS.

106 Page 4-287, Section 4.5.6, Biological Resources The Eldorado Valley Solar Enterprise Zone occurs immediately adjacent to the Piute-Eldorado CHU and is occupied by desert tortoise. The Dry Lake Valley Solar Enterprise Zone is immediately adjacent to the Mormon Mesa CHU and the Coyote Springs Solar Enterprise Zone occurs within the Mormon Mesa CHU. If any proposed project actions in these areas affect the desert tortoise, formal consultation with the Service under section 7 of the ESA may be required.

107 Page 5-37, Section 5.1.1.5.2, Groundwater, The FEIS should further discuss potential adverse impacts to biological resources from large scale groundwater withdrawals. In particular, project effects to hydrophytic vegetation, aquatic invertebrates, and desert organisms dependent on isolated water sources where spring discharge rates would be reduced and water quality impaired should be identified.

108 Line 33 of this section states that the grading of soils and other construction actions could alter slightly the quantity and quality of runoff. However, the significance of the impact would depend in part on the amount of grading done. Alterations of drainages, including those on alluvial fans, may significantly alter downgradient vegetation, including plant species composition and abundance associated with these communities. These impacts should be discussed in the FEIS.

Pages 5-161 to 5-166, Section 5.3.1.6, Biological Resources Regarding the alternative energy project proposed under the Non-defense Research and Development Program, we understand additional environmental analysis would be undertaken before a decision would be made on this proposed project. However, some project features and potential impacts should be discussed in the FEIS.

109 The discussion should also include the four technologies being considered for development, the types of habitat to be cleared, and the potential for indirect impacts, such as habitat fragmentation and disruption of wildlife movement corridors.

110 Page 5-282, Section 5.5.3.6, Coyote Springs Valley, Lines 23-25 The proposal for pumping and use of any groundwater upgradient from the Muddy River warm springs system should be re-evaluated because the Moapa dace and several species of special concern may be impacted. If pumping may adversely affect any listed species, consultation pursuant to section 7 of the ESA may be required.

111 Volume I, Appendix I, Transportation Study, Page I-23, Figure I-11 Regarding State Route NV-10 Southern Route 5, we object to this route due to its proximity to Ash Meadows NWR which provides

FEDERAL AGENCY 3 (CONTINUED)

111 (cont.) critical habitat for numerous listed species. Also, State Route 373 is not a heavy haul road.

112 Appendix C, Page C-10, National Wildlife Refuge System Administration Act of 1966, 42 U.S.C. 668dd, (Public Law 91-135, as amended) The following text should be added in the FEIS to reflect the intent of this law:

> The National Wildlife Refuge System Administration Act of 1966 provides guidelines and directives for the
> 113 administration and management of all lands within the system, including "wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas."
>
> The Secretary of Interior is authorized to permit by regulations the use of any area within the system provided "such uses are compatible with the major purposes for which such areas were established."

Migratory Bird Treaty Act of 1918, 16 U.S.C. 701 et seq., 40 Stat. 755 The following text should be added in the FEIS to more accurately reflect the intent of this law:

> 114 The Migratory Bird Treaty Act of 1918 establishes a prohibition, unless permitted by regulation, to "pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess... at any time, or in any manner, any migratory bird, included in the terms of this Convention ... for the protection of migratory birds ..., or any part, nest, or egg of any such bird."

Bald and Golden Eagle Protection Act, 16 U.S.C. 668, enacted by 54 Stat. 250 The proper name of this law is the "Bald Eagle Protection Act of 1940." The Service recommends the following text to more accurately reflect the intent of this law:

> 115 The Bald Eagle Protection Act of 1940 protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act.

116 Appendix E, Section E.2.6, Page E-19 to E-25, Biological Resources The criteria established to evaluate potential impacts resulting from the various activities should include an evaluation of DOE's legal responsibilities under the Migratory Bird Treaty Act (MBTA) or the Bald Eagle Protection Act (BEPA) in the FEIS. While evaluating impacts to habitat, populations, and individuals of threatened or endangered species is proper, the MBTA and BEPA provide protection to individuals of these species.

FEDERAL AGENCY 3 (CONTINUED)

117 Volume 2, Framework for Resource Management Plan, Page 1-2, Section 1.3, Policy and Procedures Section 7(a)(1) of the ESA requires all Federal agencies to carry out programs for the conservation of threatened and endangered species. Many Federal agencies also have policies for conservation and management of candidate species, species of special concern, and other sensitive species. If DOE has such policies, they should be discussed or a statement should be given in the FEIS that no such policies exist.

Page 4-6 The DEIS states DOE's goal for biological resources is to maintain habitat and ecosystem processes needed to support viable populations of all native plants and animals. However, the status, distribution, and life histories of many species of plants and wildlife are not well known. Thus, the implementation of a project activity, such as an increase in land use, could be underestimated and have a long term impact beyond acceptable levels.

118 Guidelines should be incorporated into the Resource Management Plan to adequately conserve all natural resources on the NTS.

119 Page 2-7, Line 14 The taxonomic name for Beatley milkvetch is *Astragalus beatleyae* and not *Astragalus badly*. This should be corrected in the FEIS.

General Comments:

120 NPS is concerned that DOE's proposed groundwater withdrawal, in combination with existing groundwater withdrawals in the Las Vegas area, may adversely reduce discharge at Lake Mead of Black Canyon springs and Aztec Spring (for example, as discussed at Page 5-200).
The EIS should reconcile this concern with the knowledge that groundwater withdrawals in the Las Vegas basin exceed the rates of groundwater recharge.

Death Valley is a regional groundwater sink and constitutes the lowest elevations in the Death Valley Groundwater Flow System. The Death Valley Groundwater Flow System (DVGWFS) is defined as those areas where groundwater flow is toward Death Valley. The flow system is complex and contains several subsystems.

121 We concur with the EIS's premise that much research has been completed on the hydrogeology, geology, and hydrology of the NTS and its associated off-site locations. However, many researchers concur that much uncertainty attends the full understanding of the DVGWFS due to geohydrologic complexities and large size of the aquifer system.

NPS must take this uncertainty into account in protecting its water rights and water-related resources, particularly in light of

FEDERAL AGENCY 3 (CONTINUED)

121 (cont)

the numerous over-appropriated groundwater basins. This uncertainty should be more fully addressed in the EIS.

The principal aquifers comprising those subsystems are: carbonate-rock aquifers, volcanic-rock aquifers, and basin-fill or alluvial aquifers. Death Valley is a terminus of the overall system although significant water discharges also occur at several intermediate locations, for example Ash Meadows.

DVGWFS is supplied primarily by recharge from mountain ranges in the northern portion of the flow system, the Spring Mountains, and some subsurface inflow from the White River Flow System. The DVGWFS underlies about 15,800 mi² (40,100 Km²) and includes 30 identified groundwater basins in southern Nevada and southeastern California (Harrill, 1995).

The few perennial streams present in Death Valley are located mainly along the west flank of the Panamint Mountains. Springs provide the majority of Death Valley's surface water and are generally widespread. Larger springs are the source of potable water supplies at developed areas at Furnace Creek and Scotty's Castle. Where present, spring water permits riparian vegetation growth and constitutes important focal points for resident and migratory animal life.

Major springs are those which flow constantly, discharge in excess of 25-30 gallons per minute, issue at elevations below 2,000 feet, and are believed to be of DVGWFS origin. Subsurface flow from the DVGWFS to the Death Valley Playa supports vegetation at the base of alluvial fans and sustains several playa pools.

Because protection of these critical water resources is mandated, all up-gradient activities potentially affecting the DVGWFS are of concern to the NPS.

The over-appropriation of the estimated perennial yield of many groundwater basins up-gradient and adjacent to Death Valley (as noted in the EIS) is of particular concern. NPS has therefore instituted a management policy of monitoring all up-gradient activities which may potentially impact water rights and water-related resources of Death Valley and Devils Hole (a detached management unit at Ash Meadows, Nevada).

Thus all applications made to appropriate groundwater from within DVGWFS are reviewed, and any which are found to exceed established parameters are protested to the Nevada State Engineer.

122 Our concerns include any proposed activities which may result in possible groundwater contamination, such as those associated with up-gradient mining operations (i.e., milling operations and tailings disposal).

FEDERAL AGENCY 3 (CONTINUED)

123 The NTS, Tonopah Test Range, and portions of the NAFR Complex are within the DVGWFS and are up-gradient from Death Valley. Any groundwater-affecting activities in those management areas have potential to impact NPS water rights and water related resources and as such warrant a similar level of scrutiny.

Underground nuclear testing in those management areas is established to have resulted in radionuclide contamination of the groundwater which is inextricably moving toward discharge points in Death Valley and at Devils Hole. As stated in the §4.1.5.2 of the EIS (regarding NTS): "All potentially affected areas are located within the Death Valley flow system." These affected areas and their future management are of concern to the NPS.

The Devils Hole area and its associated Endangered pupfish population is in proximity to the NTS and is highly susceptible to impact from up-gradient activities. As noted in the EIS, a minimum water level at the Devils Hole pool has been established by Supreme Court order so as to protect the unique desert pupfish population.

124 An independent study (by Brown and Letsan, 1991 & 1995) indicates an unexplained, gradual pool decline at Devils Hole. Data analyses suggest a possible relationship between the declining pool level and pumping of Army Well No.1 and leads to questions concerning a possibly similar relationship from past heavy pumping from Production Well J-12 conducted in support of an earlier nuclear rocket engine testing program. This issue should be addressed in the EIS.

The EIS states that effects of NTS water withdrawals include lowering of water levels in the vicinity of NTS water supply wells and some localized changes in groundwater flow directions. The study by Avon and Durbin (quoted on page 4-167 of the EIS) was presented at the third annual Devils Hole Workshop (which NPS organized). NPS staff, as well as consultants to NPS, were not in

125 complete agreement with the conclusions presented concerning the relationship of pumping at Army Well No. 1 to groundwater levels. We believe additional studies are warranted. NPS continues to

126 implement projects, collect data, support research, and conduct studies investigating the probable cause of the decline of the Devil's Hole pool level. These or similar efforts should be identified in the EIS.

127 We request analysis in the EIS of some key deficiencies in data, which have been recognized by the Under Ground Test Area research team (under the leadership of Mr. Steve Lawrence). The EIS (Page S-19) states results of groundwater modeling indicate there will be no measurable contaminants from testing in areas not under control of the DOE or the U.S. Air Force.

This statement ostensibly contends there is agreement about high confidence levels in modeling. However, conclusions of recently completed studies (D'Agnese, 1994; Harrill, 1995) indicate that

FEDERAL AGENCY 3 (CONTINUED)

low evapo-transporation values for the Death Valley playa, as have been used by some investigators, preclude developing and applying reasonable DVGWFS mathematical models.

127 cont. If the postulates set forth by D'Agnese are correct, then adjustments will affect results of future modeling efforts--necessitating higher rates of transmissivity and inflow from adjacent groundwater basins or flow systems. This potential data deficiency should be addressed in the EIS, and necessary means to acquire more representative data should be identified.

Page Specific Comments

128 Page S-19 (lines 1-2): The summary notes that 2.2 million acre-feet flow beneath the NTS and surrounding region. This number appears to be excessive--we request information about how this quantity flow was calculated.

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129 Page 3-43, Table 3-5: Impacts described refer to basin perennial yields and apparently are not "environmental impacts." Basins where the described lands are located are parts of regional ground-water flow systems. To describe the "environmental impacts", the effects on the systems caused by current water use, increased water use, and reduced water use should be addressed, in other words, the effect on groundwater levels and natural discharge areas.

130 Page 4-143 (¶ 1): The discussion tends to lead the reader to infer that wetlands have not been identified at the Ash Meadows National Wildlife Refuge. Actually, wetlands survey maps of the Ash Meadows area were completed by the U.S. Fish & Wildlife Service in 1991 and large acreages of wetlands have been identified. Clarification of this point would improve reader comprehension of the issues.

131 It should also be mentioned that Texas, Navares, and Travertine springs in Death Valley (also located downgradient from the NTS) provide a potable water supply for park visitors and for a privately-owned resort which includes restaurants, motels, hotels, and golf course.

132 Page 4-149: We request that the statement "In the western part of the Tonopah Test Range, it (the groundwater) flows toward the Oasis Valley and Sarcobatus discharge areas" be corroborated. The discussion implies Oasis Valley and Sarcobatus Flats constitute terminal discharge areas.

133 Actually, presence of the very large Grapevine and smaller Sand, Johnson, Surprise, and Mesquite springs in northeastern Death Valley necessitates outflow of substantial quantities of

FEDERAL AGENCY 3 (CONTINUED)

133 cont. groundwater into northern Death Valley. There is, to our knowledge, no recognized discharge area in Sarcobatus Flats.

134 While the riparian area in lower Oasis Valley undoubtedly accounts for some evapo-transpiration, the springs constitute the "head waters" of the Amargosa River. The primarily subsurface flows along the course of the Amargosa River have been identified by the NPS as providing a significant contribution to the groundwater resources of Death Valley.

Pages 4-149 (lines 11-22); 4-150 (lines 17-25) & Table 4-23: The perennial yields for each NTS hydrographic basin are discussed. Perennial basin yield was calculated in one of two ways: (1) one-half of the underflow, or (2) evapo-transpiration (ET) rate.

135 Because most basins do not have ET areas, perennial yield includes groundwater moving as underflow from one basin to another. In other words, water is counted more than once. Thus, perennial yields, as presented in the EIS, imply there is much more water available for capture than what "actually" is available. The "actual" perennial yield of all the basins in total is the rate of ET in the Amargosa Desert, about 24,000 afy.

136 Other appropriations (including surface water appropriations in the Ash Meadows area) and groundwater withdrawals in the Amargosa Desert area should be included in this discussion to present a more accurate picture of the availability of groundwater for capture.

137 For an example of how water use information can be presented in a regional context, see DOE's 1989 Yucca Mountain Site Characterization Plan, Chapt. 3, Hydrology. Moreover, there is more recent water-use data available which should be presented in the EIS.

138 Page 4-149 (line 27): Seaber et al., 1995, is not listed in the references.

139 Page 4-153: Although groundwater flow rates have been estimated by some researchers to average from 2-200 meters per year, some uncertainty attends those estimations. It has been pointed out in workshops associated with the evaluation of the proposed nuclear repository site at Yucca Mountain that such water estimations (based on carbon 14 analyses) may be askew due to the exchange of carbon molecules between the groundwater and older carbonate rocks it flows within.

140 Also, groundwater flow rates accelerate substantially within up to 20 miles of major discharge areas such as at Ash Meadows and Devils Hole (Dettinger, 1989). This is cause for further NPS concern about proximity of some identified NTS contaminated groundwater plumes to that area of increased transmissivity surrounding Ash Meadows and Devils Hole, a point not currently identified or discussed in the EIS.

FEDERAL AGENCY 3 (CONTINUED)

141 Page 4-154 (line 28): EIS states discharge is estimated to be about 9,000 acre-feet year/from the Alkali Flat-Furnace Creek Ranch area (Rush, 1970). It should be clarified that this estimate is for the 'Pahute Mesa' system and includes 2,000 afy of ET in Oasis Valley. As we understand it, the 'Alkali-Flat Furnace Creek Ranch' system described by DOE in its 1988 site characterization plan does not include the ET in Oasis Valley.

142 Page 4-154 (lines 30-31): EIS states that as much as 5,000 afy may flow westward from the Amargosa Desert to springs in Death Valley. This may be interpreted to mean that 5,000 afy is the maximum amount of water thought to flow from Death Valley. However, Harrill and others (1988, USGS Hydrologic Atlas 694-C; and September 1991 addendum) show subsurface flow from Amargosa Desert to Death Valley to range from 3,000 to 19,000 afy.

143 Page 4-156 (line 4): Proper citation is lacking for the statement that "...some water does flow into the Alkali Flat-Furnace Creek Ranch area and discharges at springs near Furnace Creek Ranch."

144 Page 4-165 (lines 8-15): Federal reserved water rights for NTS have not yet been decreed. It is our understanding, from reading case law and discussing same with lawyers within the Departments of the Interior and Justice, that typically the court (state or Federal) establishes the right, assigns a priority date (which is the date of the establishment of the reservation), and quantifies the right.

145 State appropriative water rights which have priority dates older than that of reserved water rights (quantified or unquantified) are senior to the reserved rights. In other words, the reserved right is only for water unappropriated by others as of the date of the reservation. The right is also limited to the amount necessary for the purpose of the reservation.

146 Death Valley was established as a monument in 1933; reserved water rights for the park have not been adjudicated, except those attending Devils Hole. Devils Hole was established January 17, 1952. Water rights reserved to Death Valley would appear to be senior to those of NTS.

147 The NPS also has California appropriative water rights for regional springs in the park: Nevares Spring (License 4621, priority date February 17, 1939), and Texas Spring (License 7854, priority date February 17, 1941). An unquantified part of the water issuing through these springs flows through the NTS.

148 Page 4-167 (lines 11-17): The United States reserved right for the Devils Hole pool level is subject to senior appropriations. The Nevada State Engineer is required by law to ensure that the pool level is not adversely affected by junior appropriators, that

FEDERAL AGENCY 3 (CONTINUED)

148 (cont.) is, that junior appropriations do not cause the pool level to fall below the court-mandated level.

149 Page 4-241 (line 10) & Table 4-40: See comments pertaining to Pages 4-149 (lines 11-22) and 4-150 (lines 17-25) and Table 4-23, above. Also note that NPS has federal reserved rights for Death Valley proper, which have not yet been adjudicated, and California appropriative water rights at Unnamed Spring (Ranger Spring) (License 7577, Priority Date June 10, 1960), Mesquite Spring (License 7578, Priority Date July 13, 1960), and Unnamed Spring (formerly Surprise Spring) (License 10780, Priority Date February 17, 1964).

150 Pages 4-285 & 4-286: Rush and Huxel (1966, p.17) noted that groundwater flows from the Eldorado Valley towards the Colorado River through Lake Mead National Recreation Area (Lake Mead).

151 There are a number of hot and cold springs in this part of the Lake Mead area, particularly in the Black Canyon area downstream from Hoover Dam. Groundwater from Eldorado Valley may also discharge at a spring in Aztec Wash. NPS has unquantified reserved water rights for these springs.

Laney (1981) postulated that the larger part of the water issuing from the springs in the Black Canyon area is groundwater underflow from Eldorado Valley. McKay and Zimmerman (1983), however, found evidence insufficient to state that groundwater from the Eldorado Valley area affects the discharge from springs and the water chemistry of springs in Black Canyon.

152 Page 4-298 (lines 12-22): Recommend defining the California Wash flow system with reference to Lake Mead. As noted in the EIS, the groundwater in the system flows into the Muddy River. NPS has a right to water in the Muddy River with a priority date of December 1, 1937.

153 Rights to water in the Muddy River were decreed by the Tenth Judicial Court of the State of Nevada in the case entitled Muddy Valley Irrigation Company vs. Moapa and Salt Lake Produce Company. According to the January 21, 1920, Order of Determination and the March 11, 1920, Further and Supplemental Order of Determination of the Nevada State Engineer, there is no water available for appropriation in Muddy River, its headwaters, sources of supply or tributaries.

The court stated that Muddy River water is fully appropriated, including its tributaries and all sources of water to the river (which may be interpreted to include groundwater.)

154 Page 4-312 (lines 27-28): Coyote Spring Valley generally is considered part of the White River groundwater flow system.

FEDERAL AGENCY 3 (CONTINUED)

155 Pages 4-311 (lines 6-7): EIS states groundwater in Coyote Spring Valley discharges in the Muddy Springs area. As noted above, the water in Muddy River is fully appropriated, including tributaries and all sources of water to the river (which may be interpreted to include groundwater).

156 Part of the water issuing from the Rogers and Bluepoint spring complex within Lake Mead in the Overton Arm area is thought to originate in the Muddy Springs area. The NPS has a Nevada state appropriative water right for Rogers Spring (priority date February 16, 1937) and unquantified reserved water rights to the springs.

Volume 1, Part B

Page 5-37 (lines 20-30): NPS appreciates DOE's continued efforts to protect Endangered pupfish in Devils Hole and ensure that court-mandated pool level is maintained. However NPS is concerned that DOE's NTS groundwater withdrawals, both existing and proposed, when combined with the existing groundwater withdrawals in the Amargosa Desert area, may adversely reduce the discharge of Death Valley springs and lower the pool level in Devils Hole.

157 We request that a calibrated groundwater flow model be used to determine potential effects of NTS' existing and proposed operations on Death Valley's water resources and water rights.

158 Page 5-160: See discussion above for Pages 4-149 (lines 11-22), Pages 4-150 (lines 17-25) and Table 4-23. Appropriations and groundwater withdrawals in the Amargosa Desert area should be included in this discussion to present a more accurate picture of the availability of groundwater for capture.

159 Again, the NPS is concerned that DOE's groundwater withdrawals at the NTS, existing and proposed, in combination with existing groundwater withdrawals in the Amargosa Desert area, may adversely reduce the discharge of Death Valley springs and lower the pool level in Devils Hole.

160 Page 5-205: Surface water in Muddy River is fully appropriated, including its tributaries and all sources of water to the river (which may be interpreted to include groundwater.) Groundwater in Dry Lake Valley is tributary to the Muddy River.

NPS is concerned that DOE's proposed groundwater withdrawal, in combination with existing groundwater withdrawals in the Muddy Springs area, may further reduce the discharge of Muddy River and the Rogers-Bluepoint Springs complex and thus injure Lake Mead's water rights.

161 Page 5-211: NPS contends Muddy River water is fully appropriated, including its tributaries and all sources of water to the river

FEDERAL AGENCY 3 (CONTINUED)

161 (which may be interpreted to include groundwater.) Groundwater in Coyote Spring Valley is tributary to Muddy River.

162 NPS is concerned that DOE's proposed groundwater withdrawal, in combination with existing groundwater withdrawals in the Muddy Springs area, may further reduce the discharge of Muddy River and the Rogers-Bluepoint Springs complex and thus injure Lake Mead's water rights.

Alternative 4 (Alternate Use of Withdrawn Lands)

Page 5-235: We reiterate our concerns as stated in discussion above for pages 5-37 and 5-160.

Page 5-262: We reiterate our concerns as stated in discussion above for page 5-200.

Page 5-264: We reiterate our concerns as stated in discussion above for page 5-205.

Page 5-268: We reiterate our concerns as stated in discussion above for page 5-211.

Mitigation Measures

163 Page 7-6 (lines 9-11): Another possible means of mitigating impacts to groundwater availability would be to purchase valid existing senior water rights in the flow system and change the place of use to the Nevada Test Site.

164 Page 7-6 (lines 13-17): NPS is concerned that, if large-scale groundwater withdrawals are implemented to ensure no contamination releases beyond the NTS boundaries, Death Valley's water rights could be adversely injured.

Volume 1, Appendices A-F

165 Changes in groundwater discharge at natural discharge areas, including Devils Hole (and Ash Meadows) as well as springs in Death Valley should be included in the impacts being considered.

Volume 2, Resource Plan Framework

166 Page 3-5 (lines 18-21): NPS should be included, since nationally significant resources and major visitor usage exist at Lake Mead National Recreation Area (to the east) and Death Valley National Park (to the west).

If you or your staff have need for more information or if questions arise on these comments, contacts are:

FEDERAL AGENCY 3 (CONTINUED)

Resource Management: Richard Anderson, Environmental Specialist or Mel Essington, Mining Engineer at (619) 786-3251; Death Valley National Park. Water Rights\Water Resources: Owen Williams at (970) 225-3505; Chief, Water Resources Program, Denver, CO. Resource Management\Water Resources: Mietek Kolipinski at (415) 744-3995; Team Leader, Natural Resources and Research, Pacific Great Basin SSO.

Thank you for the opportunity to comment.

Sincerely,

Patricia Sanderson Port

Patricia Sanderson Port
Regional Environmental Officer

cc: Director, OEPC, w/original incoming
State Director, BLM, NV
Regional Director, FWS, Portland
Field Director, Pacific West Field Area

FEDERAL AGENCY 3 (CONTINUED)

Attachment 1 - References Cited

Brown, Tim P. and Lehman, Linda L., 1995: Updated analysis of water levels in Devil's Hole, Nevada: Private Consultants, L. Lehman & Associates, Burnsville, Minnesota, 5 pages.

D'Agnese, Frank A., 1994: Using geoscientific information systems for three-dimensional modeling of regional ground-water flow systems, Death Valley Region, Nevada and California: Unpublished Ph D dissertation, Department of Geology and Geological Engineering, Colorado School of Mines, Golden, Colorado, 331 pages. (ground-water model)

Dettinger, Michael D., 1989: Distribution of carbonate-rock aquifers in southern Nevada and the potential for their development, summary of findings, 1985-88: Program for the study and testing of carbonate-rock aquifers in eastern and southern Nevada, Summary Report No. 1, U.S. Geological Survey and Desert Research Institute, University of Nevada, 37 pages.

Harrill, James R., 1995: A conceptual model of the Death Valley ground-water flow system, Nevada and California: Private Consultant, Pal Consultants Inc., 14380 Story Road, San Jose, California, 70 p. plus appendixes.

Laney, R.L., 1981: Geohydrologic reconnaissance of Lake Mead National Recreation Area -- Las Vegas Wash to Opal Mountain, Nevada: U.S. Geological Survey Open-File Report 82-115, 23 p.

McKay, D.E., and Zimmerman, D.E., 1981: Hydrogeochemical investigation of thermal springs in the Black Canyon-Hoover Dam area, Nevada and Arizona: University of Nevada System, Desert Research Institute, Water Resources Center Publication 4109, 40 p.

FEDERAL AGENCY 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 3 1996

Kenneth A. Hoar, Director
Environmental Protection Division
Nevada Operations Office
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Dear Mr. Hoar:

The US Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the **Nevada Test Site (NTS) and Off-Site Locations in the State of Nevada**. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act, and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 CFR 1500-1508).

The DEIS evaluates the potential environmental impacts which would result from anticipated DOE activities at the Nevada Test Site, the Tonopah Test Range, and at formerly operated DOE sites in Nevada (Project Shoal Area, Central Nevada Test Area, and portions of the Nellis Air Force Range Complex). A variety of DOE operations such as defense activities, waste management, environmental restoration, non-defense research and development, and work for other agencies were considered in the context of four general alternatives: No Action; Discontinue Operations; Expanded Use and; Alternate Use of Withdrawn Lands. Three additional sites in Nevada are also evaluated for co-location of solar energy production facilities. The DEIS does not identify a preferred alternative.

Since a preferred alternative is not identified, we have assigned Alternative 3, the "Expanded Use" Alternative, a rating of EO-2, Environmental Objections - Insufficient Information. The remaining three alternatives are rated EC-2, Environmental Concerns - Insufficient Information. The assigned EO-2 rating reflects our concerns that:

1 - Alternative 3 lacks mitigation measures to appropriately reduce or offset potential adverse impacts and thus could significantly impact the environment. For example, we are extremely concerned that the DEIS did not discuss possibilities for reducing habitat loss and habitat fragmentation associated with site specific projects.

2 - there is a tendency within Alternative 3 to propose the siting of new facilities in undisturbed areas rather than in areas that have been previously disturbed. For example, the DEIS did not discuss the feasibility of locating the National Ignition Facility (NIF) in an already-disturbed area.

FEDERAL AGENCY 4 (CONTINUED)

MAY 3 1996

3 - there is a lack of information concerning the various large scale projects envisioned under Alternative 3. This is particularly true for the proposed solar energy and heavy industrial facilities. While we would assume that DOE would complete site-specific NEPA documentation for these facilities, additional details concerning anticipated environmental impacts and mitigation measures, at this stage, would allow the public and other agencies the opportunity to evaluate the comparative merits of the various alternatives pursuant to 40 CFR 1502.14(b).

4 - there is a lack of proactive attention to preventing pollution. The DEIS did not specifically reference the CEQ's requirement that agency NEPA documents should integrate pollution prevention features, techniques, and mechanisms into their decisionmaking process. We believe this is a serious shortcoming, especially in terms of the large scale proposals suggested under Alternative 3.

Please refer to the attached comments & recommendations for details of our concerns regarding Alternative 3, as well as concerns relating to the other alternatives. In addition, the attached "Summary of Rating Definitions and Follow-up Action" explains EPA's rating system in more detail.

We do commend DOE's effort to convey the concerns of Native American communities who have historically used the NTS, in particular by preparing Volume 1, Appendix G, "American Indian comments for the Nevada Test Site Environmental Impact Statement." We believe that Appendix G is an important tool to carry out the goals of the Executive Order on Environmental Justice in Low-Income and Minority Communities (1994).

We appreciate the opportunity to comment on your DEIS. Please send two copies of the FEIS to our office at the letterhead address (code E-3) when it is filed with EPA's Washington, D.C. office. If you have any questions, or wish to discuss our comments or recommendations, please call me at 415-744-1566, or David Farrel, Chief, Office of Federal Activities at 415-744-1584, or have your staff call David Tomasvic at 415-744-1575.

Sincerely,

Deanna M. Wieman, Director
Office of External Affairs

Attachments:
1) Rating Sheet
2) Detailed Comments
3) Pollution Prevention Checklists

cc: Dr. Donald Elle, DOE, Las Vegas

MI #2590

FEDERAL AGENCY 4 (CONTINUED)

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussions should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and that should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

FEDERAL AGENCY 4 (CONTINUED)

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US EPA Comments on Nevada Test Site Draft Environmental Impact Statement (DEIS) - May 1996.

Issue: Many of the environmental impacts (and appropriate mitigation measures) associated with increased activities under Alternative 3 are not clearly portrayed in the DEIS.

Discussion: The DEIS frankly admits that Alternative 3 (Expanded Use) will have significant environmental impacts to the Nevada Test Site (NTS) and other areas subject to future projects. For example, in terms of water use, Volume 1 (p. 5-160) indicates that water demand for the Nondefense Research and Development Program "is likely to be large and would have a significant impact on the availability of the groundwater basin..." In a similar vein p. 5-163 states that "pumping the large quantities of groundwater needing during the operation phase of this project could impact off-site springs."

5 One of the most significant projects proposed under Alternative 3 is the development of solar energy. As noted on p. 5-164, "The fifth project within this program, alternative energy, would result in ...destruction of large areas of undisturbed habitat and might use massive quantities of water." (bold added). Approximately 2,400 acres of undisturbed habitat would be cleared for solar energy projects, and the Solar Enterprise Zone would more than triple water consumption at the NTS (p. 5-160). However, there is only a minimal discussion associated with the impacts of such a massive project, be it in terms of habitat loss, impacts to a listed species (desert tortoise), water consumption, water conservation potential, compliance with State water quality protection requirements, air impacts, pollution prevention opportunities, and other issues.

6 The discussion regarding potential environmental impacts associated with the new heavy industrial facilities proposed under Alternative 3 is similarly lacking in detail. As one example, p. 5-166 notes "There could be gaseous releases associated with new, large heavy industrial facilities." (underline added). However, the nature and probability of such gaseous releases is not identified for the reader. Other environmental impacts associated with the new, large heavy industrial facilities are also not spelled out for the reader. Before agencies and the public can weigh the comparative merits of the four alternatives, it is imperative that information concerning impacts and mitigation is available.

7 Recommendation: We strongly recommend that the Final Environmental Impact Statement (FEIS) devote considerably more attention to the environmental impacts and mitigation measures associated with the various proposals under Alternative 3, in particular the solar energy and heavy industrial facilities.

1

FEDERAL AGENCY 4 (CONTINUED)

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8 Issue: The habitat losses and habitat fragmentation portrayed in the DEIS are in some cases significant, for example, the projects proposed under Alternative 3. However there is no discussion as to whether such habitat loss and fragmentation can be minimized by DOE.

Discussion: We note that significant habitat losses are projected to occur under certain alternative scenarios, for example, the discussion in Volume 1 (pp. 5-161 and 5-162) about habitat losses associated with the solar energy complex and the National Ignition Facility. Page 5-162 contains the statement that "The National Ignition Facility would be constructed in undisturbed habitat on the edge of Mercury..." (underline added). Other proposals outlined in the DEIS involve the loss of undisturbed habitat as well. Most strikingly, the Solar Enterprise Zone calls for the use of 2,400 acres of previously undisturbed habitat (Volume 1, p. 5-164). Preventing the possibly unnecessary loss of undisturbed habitat seems to be an area where DOE may be able to implement a significant pollution prevention opportunity, which is to reduce habitat loss if at all feasible (please refer to the pollution prevention checklist on habitat preservation and protection).

Recommendation: We encourage DOE to maximize options to protect habitat and to minimize habitat loss and habitat fragmentation. For example, a significant means to protect habitat is to locate the Solar Enterprise Zone, the NIF and perhaps other new facilities in already disturbed areas, if feasible. We strongly encourage appropriate commitments in the FEIS and NEPA Record of Decision to protect habitat on the test site and in the offsite areas as fully as possible.

9 Issue: The DEIS does not specifically recognize the Council on Environmental Quality (CEQ) memorandum (Federal Register, January 29, 1993) on incorporating pollution prevention features in Federal agency NEPA documents.

Discussion: CEQ encouraged Federal agencies to integrate pollution prevention features in NEPA planning and decisions. For your reference I have enclosed several checklists for different activities from EPA's **POLLUTION PREVENTION/ ENVIRONMENTAL IMPACT REDUCTION CHECKLISTS**. These include checklists for habitat preservation and protection; facility siting; vehicle maintenance; water use; hazardous waste storage and treatment; and waste site investigations and cleanup activities.

We recognize that a number of the checklist suggestions may already be part of the project or an integral element of daily facility operations, while other checklist items may prove inapplicable or inappropriate. Nevertheless, we encourage DOE to review the enclosed checklists as the basis for a sound pollution

FEDERAL AGENCY 4 (CONTINUED)

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prevention program for the project and facility. This is particularly critical in the case of major projects such as the solar energy and heavy industrial developments should DOE approve them.

9 cont. Recommendation: The FEIS should specifically reference any items from the checklist that may be adopted by DOE, and the Record of Decision should reflect a commitment to implement feasible pollution prevention measures.

Issue: It is unclear whether polychlorinated biphenyls subject to US EPA regulations (40 CFR 761) are presently in use or in storage in transformers or equipment at the NTS.

Discussion: Volume 1, p. 4-48 indicates that PCB wastes are stored for up to nine months at the Area 6 Toxic Substances Control Act waste accumulation unit. The EIS indicates that Area 6 accepts only PCB and PCB-contaminated waste generated at the NTS and that, after a period of time, the PCB waste is shipped offsite to an approved treatment, storage and disposal facility. However, it is unclear whether PCBs subject to US EPA regulatory oversight (i.e., at concentrations of 50 parts per million or greater) are currently in use in transformers, electrical
10 equipment or elsewhere on the test site, or whether PCBs may be in storage at the facility. In an April 24, 1996 phone conversation (Don Elle, DOE and David Tomasovic, US EPA), DOE indicated that no PCBs are currently in use at the test site. However, if PCBs and PCB-contaminated wastes are being sent to Area 6, and such PCBs and PCB wastes are generated only at NTS, what is the source of such PCBs and PCB wastes?

Recommendation: The FEIS should clarify whether PCBs subject to 40 CFR 761 are in use or in storage at the test site. If PCBs are in use or in storage at the test site (i.e., not as PCB waste at Area 6), the FEIS should provide a discussion regarding their location, volume and related information. Additionally, it would be useful to indicate whether PCBs below the regulatory threshold of 50 ppm are currently in use or stored at the test site.

Editorial Comments

11 1. Volume 1, Appendix C, p. C-10. Under the section regarding the Toxic Substances Control Act (TSCA) of 1976, it states that the TSCA regulates certain toxic substances that are not regulated by the Resource Conservation and Recovery Act or other statutes, including PCBs and asbestos. We suggest that the final document be modified to note that the Clean Air Act (National Emission Standards for Hazardous Air Pollutants, NESHAP) exercises regulatory control over asbestos. You may want to modify p. C-6 (a discussion of the Clean Air Act) to note that the NESHAP apply to radionuclides, beryllium and asbestos.

FEDERAL AGENCY 4 (CONTINUED)

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR HABITAT PRESERVATION AND PROTECTION

How Can Ecosystem Preservation and Protection Affect the Environment?

In the face of development activities, populations of indigenous plants and wildlife can be protected only through the protection and preservation of ecosystems necessary for their survival. Ecosystem requirements are species-specific and can include a variety of factors, such as soil type, water regime, climate, and plant and animal associations. Ecosystems are defined by the structure and function of plant and animal communities and by the habitats they utilize. The protection and preservation of ecosystems are important for a number of reasons, which include the protection of wildlife, climatic control, maintenance of biodiversity sources, pollutant detoxification, erosion control, and CO_2 sequestration.

Wetlands are ecosystems necessary for the survival of a host of aquatic and terrestrial species. In addition, wetlands are integral parts of the hydrological system and are necessary for the maintenance of water supplies and water quality.

Ecosystems face a number of threats that reduce the area available for wildlife, change the character of the species that inhabit particular habitats, or change their form through the alteration of features, including topography or water regime. Ecosystem preservation efforts are generally directed at protecting particular species, such as endangered or threatened species, recreationally or aesthetically important species, or commercially important species. It should be noted, however, that habitat preservation (or creation or enhancement) for one species can adversely affect other species.

Also see checklists on Pest Management, Siting, Landscaping, Water Use, Grazing, and Forestry Activities.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Habitat Fragmentation Concerns. Existing habitats are typically damaged through fragmentation, often due to encroachment. Reduction in the size of an existing habitat can reduce the number of individual organisms, as well as the diversity of species, that it can support. A number of techniques can help mitigate/reduce the effects of fragmentation.

- Have other sites been considered as an alternative to encroaching on the existing habitat? *
- Has the critical area necessary for survival of the ecosystem been determined? Can the area of the habitat that will be altered be minimized? *
- Has the project been designed to avoid the fragmentation of existing habitats into a number of smaller areas? *
- Have transportation corridors, such as roads and power lines, been designed to avoid encroaching on sensitive habitats? *
- Does the project establish a system of natural corridors (which take into consideration the behavior of the species in question) to link habitat areas? *

*Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

- Will landscaping activities use native shrubs and other vegetation with high wildlife value (e.g., browse or cover)? *
- Will landscaping be designed to minimize grassy areas and maximize use of native habitats? *
- Will the effects of habitat encroachment on wildlife be mitigated by the installation of feeding stations for target species? *

Habitat Alteration Concerns. Existing habitats can be altered through changes in a number of abiotic factors. Wetlands are prone to destruction through inadvertent drainage or changes in the hydrological regime. Stream habitats can be damaged by increased siltation, reduced shading from overhanging trees, or pollution.

- Does the project include mitigative measures, such as restoration of damaged habitats or the creation of new habitats? *
- Does the project/development include adequate buffer zones between the developed area and wetlands or other habitats? *
- Has the potential to minimize hydrological impacts on wetlands through measures to reduce or control stormwater runoff and drainage been considered?
- Has project planning considered sources of water and controls of water flow to wetlands or other habitats?
- Have tree and vegetation buffer areas been maintained around streams to provide shading and reduce siltation and pollutant loadings?
- Has the project planning evaluated the vulnerability of the surrounding habitats to alterations in land use? *
- Has the timing and location of construction or other human activity included consideration of animal migrations and activity patterns? *
- Has the timing of construction or earth removal operations considered seasonal rainfall patterns to avoid sediment runoff to sensitive aquatic habitats?
- Will the project minimize the introduction of pollutants that bioaccumulate?
- Has the project considered possible impacts from increased activity or access to sensitive habitats, such as an increase in the numbers of pets and people near a wetland area? *
- Has the project considered impacts from habitat conversion? *
- Has the project considered impacts to habitats due to the air pollution it will generate? *

* Indicates an environmental impact reduction opportunity.

Species Introduction Concern. The structure and function of existing habitats can be drastically altered through the inadvertent introduction of non-indigenous species. These species may be able to better compete for resources than can the local species.

- Will landscaping activities avoid (or at least minimize) the use of exotic species? *
- Will the spread of exotic weed species be monitored and controlled? *
- Have buildings and structures been designed to minimize nesting and brooding areas for undesirable species, such as pigeons, starlings, rats, and raccoons? *
- Have corridors designated or created to mitigate for habitat fragmentation been evaluated for potential negative effects? Do the benefits of having the corridors override other possible negative effects? *

Other References

March, W.M. 1993. *Landscape Planning. Environmental Applications.* Second Edition. John Wiley and Sons.

* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR SITING

How Can Siting Affect the Environment?

Siting a building, facility, or project can affect the environment in a number of ways. Direct impacts can include destruction of existing habitats, alterations in topography and hydrology, and the introduction of pollutants into the environment. Indirect impacts include energy use and infrastructure construction for transporting people and materials to the facility, as well as environmental impacts from use and waste disposal activities.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Sensitive Ecosystems Concerns. Siting facilities in close proximity to sensitive ecosystems can result in damage or destruction of these areas. Improper siting with regard to slope and hydrology can affect sensitive areas through alterations in the hydrological regime, increased runoff and erosion, and destabilization of slopes or shorelines.

- Is it feasible to use or retrofit an existing building, structure, or developed site to locate the facility, rather than create new development and construction?
- Will facility siting avoid or maximize the distance away from sensitive areas, such as wildlife habitats, wetlands, streambanks, and other sensitive ecosystems? *
- Is the project site located away from streambanks/beds, shorelines, and flood-prone areas to avoid affecting these areas?
- Will buffers, such as forests or wetlands, be used between the development site and streams or shorelines to minimize impacts on aquatic systems? *
- If the development is linear (e.g., a road, bridge, or pipeline), does it take advantage of existing rights of way to avoid disturbing additional habitats?

Water and Air Quality Concerns. The siting and location of a development may increase the effects on water and air quality. Siting is particularly important if pollutants cannot be contained within the development. The potential for impact depends on the nature of water (e.g., existing drinking water sources) and air quality in an area and its potential to be affected by pollutants (e.g., depth to groundwater).

- If the project has the potential to affect groundwater quality through the use or disposal of chemicals or nutrients, has consideration been given to avoiding placement over aquifer recharge areas? *
- Will facility siting avoid direct contact with groundwater resulting from deep footings, foundation work, tunneling, or underground utilities?
- Is the project site designed to avoid or mitigate storm water impacts through the use of retention basins, infiltration fields, or other methods to reduce runoff?

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

- Will siting facilities/buildings avoid steep slopes to prevent erosion or slope failure?
- Will erosion control measures be used if facilities are sited on slopes? Erosion control measures include maintaining vegetation cover and timing construction activities to avoid heavy seasonal rainfall.
- If siting must take place in an aquifer recharge area, will protective measures, such as liners and containment areas, be used to prevent the migration of wastes into groundwater?
- For major sources of air pollutants, such as refineries and incinerators, has the attainment status of the area for criteria air pollutants, including ozone and pm_{10}, been considered in the siting decision? *

Transportation Concerns. The siting of a facility should include consideration of the impacts of transporting workers, raw materials, finished products, and energy sources (electricity, natural gas). Efficiency is increased for facilities that are located in proximity to suppliers and to existing transportation corridors and infrastructure. Transportation savings can also be accomplished by concentrating development on a site rather than spreading services across many widely separated buildings.

- Is the site located in proximity to existing rail lines, roads, and highways?
- Is the site located near an existing public transportation system that can be used by the workforce to access the facility?
- Can the facility take advantage of existing power lines and pipeline rights-of-way to supply its energy needs?
- Does the development design consider increased density to avoid the need for transportation within the facility?
- Is the site located near sources of raw materials, personnel, or markets?

Energy Concerns. Energy use within a facility often can be minimized through design and siting features. The orientation of buildings to take advantage of natural lighting, solar heating, and/or cooling can increase energy efficiency.

- Has the siting considered orientation for passive heating and cooling?
- Does the siting reduce solar radiation by shading critical surfaces and increasing the amount of vegetation surrounding the facility?
- Does the siting take advantage of natural topography features to increase shading during periods when cooling is required?
- Does the siting take advantage of natural wind patterns for cooling?

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

Other References

American Planning Association. The Transportation/Land Use Connection. Planners Advisory Service Report. Telephone No. (312) 955-9100.

Marsh, W.M. 1991. *Landscape Planning. Environmental Applications.* Second Edition. John Wiley and Sons.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR VEHICLE MAINTENANCE

How Can Vehicle Maintenance Affect the Environment?

Vehicle maintenance shops can generate a variety of solid and hazardous wastes. Commonly generated wastes include out-of-date supplies, wastewater, oils, petroleum products and greases, solvents (both waste liquids and vapors), paints, and tires, as well as waste metal, cardboard, and paper. Each of these wastes has the potential to negatively affect one or more of the environmental media (i.e., land, water, and air). However, such activities and practices as segregating wastes, using proper inventory control, preventing spills, practicing preventive maintenance, improving process efficiency, and recycling can help minimize these impacts.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Procurement Concerns. Purchasing decisions are an important element of pollution prevention. Making environmentally sound purchasing decisions can help reduce the amount of waste generated by a vehicle maintenance shop. In addition, the purchasing of recycled content products helps support markets for materials collected for recycling.

Executive Order 12873, Federal Acquisition, Recycling, and Waste Prevention, directs Federal agencies to increase their purchases of recycled or environmentally preferable (EP) products.

- Will the facility use recycled automotive maintenance products and retread tires? Such products as refiltered or re-refined oil and hydraulic fluids, as well as recycled antifreeze and solvents, are available for use in vehicle maintenance operations.
- Will the facility identify and use the least toxic product available to complete a job? Many automotive maintenance products are formulated with high percentages of volatile organic compounds (VOCs) and toxic constituents. Safer, more environmentally sound materials are, however, available and perform as well as traditional products. For example, non-chlorinated solvents can be substituted for chlorinated solvents, detergent-based solutions can be substituted for caustic solutions in many applications, and water-based cleaners often can be used instead of organic solvents.
- Will long-lasting or synthetic oils be used when possible? Long-lasting oils reduce waste generation because they do not need to be replaced as often.

Hazardous Materials Storage. Vehicle maintenance operations often involve the use of hazardous materials. The use of these materials can affect the environment through improper storage, air emissions of volatile chemicals, and spills and other uncontrolled releases, as well as the potential generation of toxic waste materials.

- Will hazardous materials be properly stored and handled? Proper storage and handling can include labeling containers, protecting materials from the elements, maintaining secondary containment, ensuring the compatibility of stored materials to avoid explosion hazards, and following instructions on the product's Material Safety Data Sheets (MSDSs).*
- Will the access to hazardous materials be limited? Limiting the access to hazardous materials allows a shop to keep track of chemical usage more easily and helps reduce unnecessary waste generation.
- Will a first-in, first-out inventory control system be used? This type of system helps prevent materials from expiring prior to use and becoming unnecessary waste. Efforts should also be made to minimize inventory levels by purchasing only the amount of material that will be needed in a reasonably short period of time (e.g., 30 days) to reduce loss from spoilage. At the same time, however, materials should be purchased in the largest containers appropriate to minimize excessive packaging.

Operating Practices. The use of oils, solvents, and other vehicle maintenance products can have significant effects on human health and the environment. The adoption of environmentally conscious operating practices can, however, reduce these impacts.

- Will vehicle maintenance bays be located to minimize the potential impacts of maintenance activities on the surrounding environment?*
- Will the facility avoid unnecessary maintenance on vehicles? One of the biggest sources of waste generated from vehicle maintenance shops comes from unneeded maintenance activities. An example of a way to minimize this waste is to change vehicle fluids on an as-needed basis rather than according to a fixed maintenance schedule not based on vehicle usage.
- Does the facility operating plan specify reducing the number and types of products, such as solvents, that will be used at the shop? Minimizing the types of different solvents used can simplify inventory procedures, reduce waste management issues, and facilitate recycling.
- Does the facility keep copies of its spill control and countermeasure plan for hazardous materials in each shop?
- Will the facility use drip pans, secondary containment, and other collection devices to help reduce the impact of spills and the use of absorbent products?
- Will a bulk fluids distribution system be cost effective? This type of system allows employees to dispense only as much product as is necessary for a job, in addition to reducing the potential for spills associated with the use of large, unwieldy containers.*
- Will the facility's solvent sink be operated to reduce environmental impacts? Environmentally preferable operating practices include pre-rinsing parts with dirty solvent before using fresh solvent to extend solvent life, removing parts from the sink slowly to reduce solvent dragout, using drip racks to reduce solvent loss, keeping sink lids closed when not in use to minimize the evaporation of solvent, not leaving solvent streams running, and cleaning out sludges regularly to maintain fresh solvent.

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

Vehicle Washing Activities. Vehicle washing can generate a large quantity of wastewater that may be contaminated with oils, greases, and dirt, as well as washing soaps and detergents. In some States, it is illegal to wash vehicles without wastewater recycling equipment under certain conditions.

- Does vehicle washing need to take place onsite? In some instances, offsite washing is a more efficient and environmentally preferable option. However, if properly implemented, onsite washing can be preferable since it can reduce the amount of fuel used expressly for moving the vehicle for washing.
- Will vehicle washing take place at a centralized, enclosed, and contained area to reduce potential impacts to the surrounding environment from runoff?
- Will vehicle washing be conducted on an as-needed basis, rather than according to a fixed schedule? Reducing unnecessary vehicle washing can significantly reduce wastewater generation.
- Will the wastewater from the wash rack's floor drains be properly treated onsite (e.g., by removing oils, greases, and other contaminants) prior to discharge to a waterbody? Will an oil/water separator be used?
- Will the wash rack use detergents that do not contain phosphates or toxics?
- Can water from the wash rack be captured, filtered, and reused rather than being released? If a facility will maintain a large fleet of vehicles that require washing, a custom designed washing facility may be cost effective. If vehicle washing must be performed by hand, a high volume, low pressure washer system will be more cost effective than a simple hose in terms of reduced personnel hours and energy usage.

Reuse and Recycling. Many of the waste materials generated during vehicle maintenance activities can be reused or recycled into usable products. Reuse and recycling are preferable to treatment and disposal because they remove materials that would otherwise become waste.

- Are there plans for adequate segregation and containment of waste oil, antifreeze, and solvent? Each of these materials can be reclaimed or recycled if segregated. However, commingling these wastes makes recovery more difficult or impossible and dramatically increases waste disposal costs. *
- Will the facility use solvent or antifreeze reclamation units? The onsite recycling of fluids is often a cost-effective pollution prevention option for larger shops. When onsite recycling is not cost effective, these materials can be segregated and picked up by a contractor for offsite recycling. *
- Will the facility collect scrap metals generated at the shop (e.g., used parts, empty material storage drums) for recycling? In some instances, punctured aerosol spray cans and drained oil filter casings may also be recycled as scrap. *
- Will automotive batteries be collected and stored for recycling? *

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

- Will the facility reuse cardboard and other packaging received in the delivery of parts and materials or collect it for recycling? *
- Will used be collected and stored for recycling? *

Painting Operations. Wastes associated with painting operations include unused paints and dirty thinner. Thinners and solvents can also be sources of VOC emissions. Used spray booth filters are also waste products that may be generated from these shops. Proper training of employees and the use of high efficiency equipment can help reduce waste generation.

- Can water-based coatings be used instead of solvent-based coatings? The automobile industry is working closely with paint manufacturers to develop acceptable substitutes for solvent-based paints.
- Will the facility use high efficiency painting technologies? When properly used, high volume, low pressure (HVLP) and electrostatic painting systems can reduce the amount of paint needed for a job and the amount of VOCs released to the air.
- Will employees be trained to use as little solvent/thinner as possible to clean up after painting activities?
- Will the facility employ a gun cleaning station? Gun cleaning stations capture the thinner/solvent shot through the gun and condense it for reuse instead of venting the substance to the air. In some cases, it may be possible to use water-based gun cleaners as an alternative to solvent thinner. *
- Will the paint shop utilize reusable polystyrene booth filters? Traditional paint booth filters often must be handled as hazardous waste because of the presence of wet paint or paint containing lead or chromium. Polystyrene filters can be cleaned with compressed air and reused (with the paint residue captured for disposal). Once it can no longer be used, the cleaned filter often can be disposed of by dissolving it in a waste thinner drum.
- Will painting operations be located in an enclosed and properly ventilated area to reduce potential environmental releases?
- Will employees be trained to minimize the amount of waste paint generated by mixing only the amount of paint needed for a job?

Pollution Prevention/Environmental Reduction Impact Training. Pollution prevention and environmental impact reduction in vehicle maintenance shops is closely linked with employee attitudes toward their work and the environment. A facility that provides basic environmental awareness/pollution prevention training and enthusiastically supports pollution prevention on a daily basis will have a noticeable effect on worker attitudes and can help reduce vehicle maintenance waste streams through such procedures as good housekeeping, spill prevention, and improved materials handling.

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

Other References

U.S. Environmental Protection Agency, Office of Research and Development. October 1991. "Guides to Pollution Prevention: The Automotive Refinishing Industry." EPA/625/7-91/016.

U.S. Environmental Protection Agency, Office of Research and Development. October 1991. "Guides to Pollution Prevention: The Automotive Repair Industry." EPA/625/7-91/013.

FEDERAL AGENCY 4 (CONTINUED)

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR WATER USE

How Can Water Use Affect the Environment?

The procurement and delivery of water for domestic, commercial, and industrial use, as well as the treatment of wastewater generated by these users, affect the environment. Water procurement can affect the quality and quantity of both surface water and groundwater, cause land subsidence from groundwater overdraft, and destroy habitat. Water delivery systems can destroy habitat and ecosystems from canal and pipeline construction and consume energy for pumping. Wastewater affects surface water quality and habitats and requires energy to treat. The employment of water conservation techniques can reduce the environmental effects of water use.

What Developers Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Executive Order 12902, Energy Efficiency and Water Conservation, directs all Federal agencies and facilities to improve their water efficiency. Every Federal facility is required to contribute toward agency water use reduction and conservation goals.

Heating and Cooling. A study by Denver Water, supplier to Denver, Colorado, determined that 48 percent of the water used by manufacturers is used for heating and cooling purposes. A significant amount of water use and wastewater production can be minimized by increasing the efficiency of heating and cooling equipment and by decreasing heating and cooling requirements.

- Will energy conservation measures be employed to reduce the need for heating or cooling?
- Will the most efficient heating and cooling equipment available be used to reduce water needs?
- Can air-cooled equipment be used instead of water-cooled?
- Will heating and cooling equipment be maintained according to manufacturer recommendations and will leaks be repaired in a timely manner? Proper maintenance can help reduce the use of water by this equipment.
- Will once-through cooled water be used? If once-through cooling is used, will the water be reused for irrigation or make-up water? Whenever feasible, once-through cooling should be eliminated from any facility design.

Sanitary and Kitchen Fixtures. Water conserving fixtures can significantly reduce water use in sanitary and kitchen facilities in commercial offices, industrial buildings, and residential dwellings.

- Are ultra-low flush toilets specified for installation?
- Will flow restrictors be installed on faucets and showers?
- Will notices be posted to encourage minimizing shower time and turning the tap off when the water is not needed?
- Will aerators be used on all faucets?

- Will fixtures be routinely inspected for leaks and other problems, and will they be repaired promptly?

Process Water. Manufacturers, food and beverage processors, schools, health care facilities, and laundries use substantial amounts of water in their processes. Reductions can be achieved in the amount of water used by installing water saving devices, implementing new or modified processes, and reusing water.

- Have process modifications that would use less or no water been evaluated for implementation? Have water-less processes been considered?
- Could rates be structured to reduce peak water demand?
- Will automatic valves and water level sensors be employed to turn water off when not in use and to provide the precise amount when needed?
- Will process water be recirculated until it is too dirty for use?
- Will process water be recycled onsite and returned to the process or used to meet other onsite needs (e.g., landscaping)? *

Landscaping. Landscaping plans tailored to the specific nature of the local environment can greatly reduce water use. Appropriate landscaping includes using water conserving plants in hot and dry regions. Landscape irrigation is also a key area where water use can be reduced.

President Clinton recently signed a Presidential Memorandum calling for the establishment of guidelines for Federal facility managers on how to implement water conservation techniques in conjunction with landscaping activities.

- Will vegetation be planted that is drought tolerant and uses low levels of water?
- Depending on the type of landscaping, is the most efficient type of water application specified for use?
- Will daytime watering be prohibited?
- Will automatic timers be employed, and will watering duration be monitored to prevent overwatering?
- Can non-potable, treated wastewater be used for irrigation? *

Other References

Maddaus, W.O. 1989. *Water Conservation*. American Water Works Association.

Water Efficiency: A Resource for Utility Managers, Community Planners, and Other Decisionmakers. 1991. The Water Program, Rocky Mountain Institute.

* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR HAZARDOUS WASTE STORAGE AND TREATMENT FACILITIES

How Can Hazardous Waste Storage and Treatment Facilities Affect the Environment?

The construction and operation of hazardous waste storage and treatment facilities can have a variety of effects on the environment. Construction impacts may include the destruction or alteration of wildlife habitats, wind and water erosion of soils, compaction of soils, and sedimentation of waterbodies. Operations may introduce chemical pollution to soils, groundwater, surface waters, or air resulting from spills, equipment failures, improper handling, or fires. Facility processes may consume energy and water and require the transportation of hazardous wastes to and from the facility. New roadways may need to be constructed depending on the selected site location, as waste facilities are often sited in remote or undeveloped areas.

Also see checklists on Hazardous Waste Incinerators, Waste Site Investigation and Cleanup Activities, Chemical Demilitarization, Base Closure and Realization, Solid Waste Landfills, Highways and Bridges, and Water Use.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Facility Construction. The construction of hazardous waste storage and treatment facilities can have significant impacts on the environment, such as degradation of wildlife habitats, erosion and/or compaction of soils, dust and noise, and discharges of sediments to surface water. Pollution prevention techniques can help mitigate or reduce construction effects.

- Have attempts been made to avoid construction in environmentally sensitive areas? *
- Does the project minimize construction activities in the vicinity of rivers or streams that could be affected by runoff or the erosion of construction wastes?
- Does the project make use of existing roadway alignments (if possible) to reduce the amount of waste generated as a result of construction activities?
- Does the construction plan provide for erosion (wind and water) and sediment control during and after construction?
- Are the effects of soil compaction, which result from construction activities, minimized to prevent an increase in runoff?
- Does the construction plan include revegetation of areas disturbed by construction to minimize erosion and sedimentation?

Facility Operations. Operation of a hazardous waste storage and treatment facility could potentially introduce chemical or other pollution to soils, groundwater, surface waters, or air resulting from leaks, spills, equipment failures, or fires. These facilities usually are regulated under the Resource Conservation and Recovery Act (RCRA) and closely monitored and inspected by regulatory agencies. Facility processes may

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

consume energy and water resources and may require the transportation of hazardous wastes to and from the facility.

- Have measures been considered to promote the reduction and minimization of wastes generated prior to treatment and disposal?
- Has the containment system been designed to be compatible with the types of wastes to be treated and/or stored at the facility?
- Are spill control materials and equipment adequate and compatible with the hazardous wastes treated or stored at the facility?
- Have procedures been established to ensure that wastes are properly handled by facility personnel?
- Have facility personnel been trained in spill and emergency response procedures, as well as techniques to prevent pollution and minimize the generation of excess waste?
- Have adequate fire suppression equipment and materials been included in the spill control and emergency response measures to prevent the accidental release of hazardous constituents to the environment?
- Have emission control mechanisms been installed on treatment process equipment, ancillary equipment, and storage tanks to prevent releases? *

Facility Processes. Processes common to hazardous waste treatment and storage facilities consume water and energy resources, as well as generate wastes. Such processes as flocculation, neutralization, chemical reduction, oil-water separation, dewatering, and filter pressing can generate wastewater and sludge residues that may be hazardous.

- Will the facility employ processes to recycle and reuse wastes (or waste components, such as heavy metals) brought to the facility and wastes (or waste components) generated by the facility? *
- Have waste treatment processes been assessed to consider the amount of water and energy that will be consumed and how much waste (wastewater/sludge) will be generated?
- Have measures been considered to minimize the amount of treatment materials used and the amount of wastes generated from treatment processes?
- Will the facility apply pollution prevention techniques to secondary processes, such as facility maintenance, equipment, and vehicle maintenance, to minimize releases to the environment?
- Will the facility maintain the smallest possible inventory of shelf life sensitive hazardous materials to prevent the disposal of expired chemicals?

* Indicates an environmental impact reduction opportunity.

FEDERAL AGENCY 4 (CONTINUED)

Transportation of Hazardous Wastes to and from the Facility. Hazardous wastes must be delivered to the facility for treatment and or storage, either by roadway (trucks) or rail (railcars). The transportation of hazardous wastes presents significant threats to the environment in the event of a crash or spill, which could cause a release of hazardous constituents to soils, surface waters, air, or groundwater. The transportation of wastes from regulated facilities usually is closely monitored by regulatory agencies.

- Has the facility been located to minimize transport requirements to and from the facility?
- Have measures been considered to minimize the potential for releases resulting from crashes or problems while transporting wastes to or from the facility (such as choosing the safest and least populated routes of travel for the transportation of hazardous wastes)?
- For facilities with rail transport capabilities, has the facility rail spur been built with secondary containment to prevent releases during the transfer of wastes?

Other References

Lawrence Livermore National Laboratory. May 1988. Environmental Assessment for the Environmental Compliance and Cleanup Project.

Lawrence Livermore National Laboratory. July 1990. CERCLA Feasibility Study for the LLNL-Livermore Site (including a NEPA Environmental Assessment).

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR WASTE SITE INVESTIGATIONS AND CLEANUP ACTIVITIES

How Can Waste Site Cleanup Activities Affect the Environment?

The activities associated with waste site investigations and cleanups can have a variety of impacts on the environment. Activities may include the construction of roadways or trenches, installation and operation of remediation and treatment systems, soil/waste sampling and groundwater well installation and monitoring, and removal and transportation/cleanup of contaminated soils and groundwater. Effects may include wildlife habitat alteration or destruction, wind and water erosion of soils, soil compaction, and sedimentation of waterbodies. The extraction of contaminated groundwater can cause land subsidence from groundwater overdraft. Waste site cleanup operations may introduce chemical pollution to soils, groundwater, surface waters, or air resulting from excavations, soil groundwater treatment, spills, improper drilling techniques, equipment failures, or fires. Cleanup operations may consume energy and water resources and could require the transportation of wastes that contain hazardous constituents to and from the site.

Also see checklists on Hazardous Waste Incinerators, Waste Treatment and Storage Facilities, Chemical Demilitarization, Base Closure and Realignment, Solid Waste Landfills, Building/Housing Construction, Highways and Bridges, and Water Use.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Site Access and Construction. Construction activities can have significant impacts on the environment, including degradation of wildlife habitats, erosion and/or compaction of soils, dust and noise pollution, and sedimentation of surface waters. Pollution prevention techniques can help mitigate or reduce construction effects.

- Have attempts been made to minimize or avoid construction in environmentally sensitive areas? *
- Will the project make use of existing roadway alignments (if possible) to reduce the amount of waste resulting from road construction activities?
- Does the construction plan provide for erosion (wind and water) and sediment control during and after construction?
- Do construction plans consider the effects of soil compaction on runoff quantity from the site?
- Does the construction plan include revegetation of areas disturbed by construction to minimize erosion and sedimentation?
- Will material and waste storage areas be adequately contained to reduce exposure? *
- Will site access routes and equipment storage areas be planned and located to minimize erosion potential?
- Will secondary containment be provided in equipment fueling areas?

* Indicates an environmental impact reduction opportunity.

Waste Site Investigation and Cleanup Operations. Waste site investigation and cleanup operations could introduce chemical or other pollution to soils, groundwater, surface waters, or air resulting from inadequate containment of processes, spills, equipment failures, or fires. Cleanup operations may consume energy and water resources and may require the transportation of wastes that could contain hazardous constituents to and from the site.

- Have efforts been taken to prevent or minimize the introduction of hazardous contaminants to soils, groundwater, surface waters, and air before, during, and after waste site investigation and cleanup activities?
- Have measures been considered to prevent the release of pollutants from contaminated soils at the cleanup site to surface water via runoff and air via wind?
- Will the site be capped with a natural or synthetic protective covering?
- Have measures been considered to prevent spills or releases of contaminated groundwater that has been extracted from the site?
- Does the cleanup plan prevent noxious or hazardous gas emissions, including volatile organic compounds, from being vented or released to the air?
- Are leachate collection systems designed to prevent spills or releases after the leachate has been extracted?
- Have measures been considered to provide for the safe transportation of leachate from the site?
- Have the proposed waste site cleanup operations been assessed to consider the amount of water and energy that will be consumed and how much waste (wastewater/sludge) the processes may generate?
- Have measures been considered to maximize the amount of water and energy resources that will be consumed?
- Have measures been considered to minimize the amount of materials used during cleanup and the amount of wastes generated from materials usage?

Transportation of Cleanup Wastes from the Site. Cleanup wastes may contain hazardous constituents that will have to be transported from the site for treatment, storage, or disposal. The transportation of hazardous wastes presents significant threats to the environment in the event of a crash or spill, which could cause a release of hazardous constituents to soils, surface waters, air, or groundwater.

- Have measures been considered to minimize the potential for releases resulting from crashes or problems while transporting waste from the site?
- Have the safest and least populated routes of travel been identified for the transportation of wastes from the facility by trucks?
- Are the transporters of cleanup site wastes certified to transport these wastes?

FEDERAL AGENCY 4 (CONTINUED)

- Are wastes transported in a contained manner (i.e., contaminated soils properly covered and secured)?
- Have waste treatment, storage, or disposal destinations been chosen to minimize the potential for the release of contaminants to the environment?

Other References

Lawrence Livermore National Laboratory. May 1988. Environmental Assessment for the Environmental Compliance and Cleanup Project.

Lawrence Livermore National Laboratory. July 1990. CERCLA Feasibility Study for the LLNL-Livermore Site (including a NEPA Environmental Assessment).

FEDERAL AGENCY 5

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

03 MAY 1995

MEMORANDUM FOR Mr. Terry A. Vaeth, Acting Manager
Department of Energy
Nevada Operations Office
PO Box 98518
Las Vegas, NV 89193-8518

FROM: HQ USAF/CEVP
1260 Air Force Pentagon
Washington DC 20330-1260

SUBJECT: Review of the Draft Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) and Off-site Locations in the State of Nevada

We have completed our review of the subject document. A number of comments are summarized on the attached sheets. We are asking Headquarters Air Combat Command to ensure Nellis Air Force Base provides you input regarding the important subject of aircraft noise.

My point of contact for this action is Mr. John Hare at 703-695-8942.

K Reinertson

KENNETH L. REINERTSON
Chief, Environmental Planning Division
Office of The Civil Engineer

Attachment:
NTS EIS Review Comments

cc:
HQ ACC/CEV

FEDERAL AGENCY 5 (CONTINUED)

COMMENTS ON
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) NEVADA TEST SITE AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA

AIR ISSUES:

1 1. The DEIS needs to show that the proposed actions (including construction) do not impact the PSD I area(s).

a. Are there any *other* PSD I areas present besides the Grand Canyon? Other parks could be classified as such.

b. As long as the actions are greater than 10 km, a more precise analysis is not required.

c. Any emissions greater than 1 ug/m-to-the-3rd, is significant.

2 2. Even though the areas are in attainment areas, conformity should be addressed. In other words, include a generic statement that the actions do not negatively affect the State Implementation Plan (SIP).

3 3. In the Summary DEIS, Page S-22, Line 16: delete "most likely" (be more positive).

4 4. In the Summary DEIS, Page S-44, Lines 24-27: Add more information on air. Any new major air emission sources planned for? If none, so state. Address: No significant impacts, PSD I area, and conformity.

5 5. In Vol I, Page 5-201, Lines 28 and 30: Typos - delete hyphen in carbon monoxide. See above comments for Pages 5-193 and 5-201.

AIRCRAFT NOISE:

6 Analysis of aircraft noise impacts needs to be expanded. Vol I, Paragraph 4.1.8 states "The major noise sources within NTS include...aircraft operations." Vol I, Paragraphs 5.1.1.8 and 5.3.1.8 indicate supersonic aircraft from Nellis AFB might fly over the site producing sonic booms, and subsonic low-level flights might also create significant noise. Among the questions still needing answers are "How much noise from what type of flying operations?" and "What are and how significant are the environmental impacts?"

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SOVEREIGN NATION 1

Tuesday:

1 1. What wrong with nuclear generation at the test sites (maybe will low level waste?) Even the uranium tailings dump

2 2 could be tilled for methane gas, and hooked up to as methane gas motor + generator for electricity!

3 There no people at this meeting who have relatives buried here.

CW. Lynch

SOVEREIGN NATION 2

Transportation Study - Response of CGTO

Consultation

1 The compilers of the NTS EIS Transportation Study refer to meeting with various American Indian individuals, groups, and tribes. The interactions are listed as tables and discussed throughout the text. These meetings do not constitute full government-to-government consultation with American Indian tribes nor have they led to an American Indian transportation study. Instead, the meetings simply informed Indian people that a NTS EIS transportation study was being conducted. Information about pending studies is an important first step in consultation with American Indian tribes and organizations; however, no additional consultation steps were taken. The Transportation Study, therefore, cannot be supported by the American Indian tribes and organizations represented by the CGTO.

2 Especially disturbing to the CGTO is an apparent confusion regarding the purpose of CGTO consultation during the NTS EIS. For example, the response to Question 416 (D-8, 13-9) where a public response raised the issue of the DOE going to the tribes for consultation, rather than them having to come to the DOE. The writers of the Transportation Study responded by referring to the CGTO involvement with other portions of the NTS EIS as though it was an example of consultation on the transportation study. This is an incorrect statement, inasmuch as, the CGTO were informed by the DOE EIS Transportation Study team that the CGTO did not have to respond to transportation issues because the Transportation Study team were working directly with the tribes in a parallel but separate consultation. The CGTO is only now responding to the Transportation Study because it neither identifies nor assesses American Indian impacts.

3 American Indian tribes are not "Stakeholders" and thus meetings designed to elicit the opinion of public stakeholders are not an appropriate method for consulting with tribes who are to be addressed on a government-to-government basis according to the President of the United States. Thus, there are misleading and incorrect statements in section 2.0 Stakeholder Issues which indicate that American Indian tribes were given the opportunity to identify issues during public meetings. No public meetings should be considered as a replacement for government-to-government consultation. All reference to American Indian consultation should be removed from this section of the report unless it specifically refers to American Indian consultation on a government-to-government basis.

American Indian Transportation Issues

4 Although some American Indian transportation issues were suggested during the NTS EIS scoping period and again raised in the CGTO meetings with the Transportation Study team, the report does not include these issues. Despite a record of meetings with American Indian people, groups, and tribes, the study does not present critical American Indian concerns. These include, among others, the impact of radioactive and hazardous waste travel along rail and highway on nearby existing and planned American Indian businesses, especially those of the Moapa Paiute Tribe and the Las Vegas Paiute Tribe. American Indian people, especially elders,

SOVEREIGN NATION 2 (CONTINUED)

4 (cont.) express a fear of radiation as an "angry rock" which can impact people as it travels, even though it remains packaged and no transportation accident occurs to spill the contents of the package. Although this perception of radioactivity was expressed by American Indian people in an 1987 DOE study, the nature and extent of this fear has not been addressed by the transportation study. American Indian people also express concern that places of spiritual power are being and could be additionally harmed by the transportation of radioactive and hazardous waste. American Indian people are currently reacting to these concerns by worrying about the past and current impacts of waste transportation and by avoiding certain places they believe have been adversely impacted by the transportation of radioactive and hazardous waste.

5 The CGTO would like to express the opinion that the cultural concerns of other American Indian tribes and organizations should be included in the Transportation Study. The CGTO understands that the Transportation Study is focussed on what it called "local issues" (Vol. 1, Appendix L, 1-1), but is not certain why other Indian tribes in the West and Southwest are not included in this study? When most statistics cited in the report are state-wide (here Nevada, why are other Nevada Indian tribes not considered in this transportation study.

6 The CGTO would like to know if probability calculations are based on transportation safety nation-wide or within the local area of the Transportation Study. If the calculations are based on national statistics, why were local statistics not used instead, especially given the local-issue focus of the analysis.

7 The CGTO would like to express the opinion that recent rail derailments in the West and Southwest be incorporated into the probability calculations of railroad accidents.

8 The CGTO would like to express the opinion that the probability of either railroad or highway accidents has increased and is increasing owing to domestic acts of violence directed at the Federal government, its' employees, and its' activities. These increased accident probabilities should be calculated into the Transportation Study and the report should clearly inform readers how these accident trends and potential domestic terrorist activities were incorporated into the transportation analysis.

A Faulty Transportation Assessment (Attachment F, Nevada Test Site Rail Access Study)

9 Attachment F contains a faulty assessment of potential impacts to American Indian cultural resources that would occur if a variety of new railroad tracks were constructed connecting the NTS with existing railroads. The cultural resource analysis contained in this study was conducted without the involvement of the CGTO who serve as guides, participants, and monitors of all cultural resource studies associated with the NTS. As a result, the study cannot be considered to be even a preliminary assessment of potential American Indian cultural resource impacts.

Some of the more significant flaws in the study are as follows:

SOVEREIGN NATION 2 (CONTINUED)

10 • The study in Attachment F is limited to an analysis of archaeological remains, thus failing to consider the full range of American Indian cultural resources which include, among others, Indian plants, animals, Traditional Cultural Properties, mineral deposits, water, sites of historical importance, and cultural landscapes.

11 • The archaeological site analysis in Attachment F is limited to a review of previously recorded sites. While such an analysis is certainly appropriate as a beginning of an assessment, it cannot be used to make conclusions about potential impacts to these sites unless their cultural significance has been evaluated by American Indian people. Also, previous archaeology studies were not conducted with the railroad development in mind, thus their sampling methods and their study locations do not correspond with the ground disturbing activities that would be associated with the construction of a railroad. Also, previous archaeological studies were not conducted with the guidance, participation, and review of American Indian tribes and organizations and thus do not reflect current DOE/NV policies of involving Indian people in these studies.

12 • The cultural resource analysis in Attachment F fails to reflect the well known and well documented cultural significance of the area all around the Spring Mountains. The area is where the Creator transported all Southern Paiutes into existence, and therefore gave them the mandate to use and protect these lands. As such, the area around the Spring Mountains is the center of the Southern Paiute Holy Land, and it is literally filled with places of utmost cultural significance.

13 • Much of this analysis suggests it is about Yucca Mountain rather than about proposals properly considered in the NTS EIS. Beyond the frequent reference to Yucca Mountain in the study, there is Figure F-1 which specifically indicates that all of the considered routes lead only to the Yucca Mountain Site. If the Transportation Study is to be used as part of the Yucca Mountain EIS, then the CGTO would like the opportunity to respond to the Transportation Study as a component of the Yucca Mountain study.

Some other flaws in the Attachment F study are as follows:

14 • The Moapa Paiute Indian Reservation is missing from the transportation maps.

15 • Figures F-2 and F-4 incorrectly identifies the "Las Vegas Paiute Indian Reservation" as the "Paiute Indian Reservation".

16 • The term "Southern Paiute Reservation" is used in the text (F-29) to refer to the "Las Vegas Paiute Indian Reservation."

17 • The term "Indian Reservation" is used without a defined boundary on Figure F-1 (F-4). Since there is no such place with this name, the term could be referring to the "Walker River Paiute Indian Reservation" or the "Yomba Shoshone Reservation." It should also be pointed out that the "Duckwater Shoshone Reservation" is located between railroad routes #8 and #9, but this important place is missing from the figure. The "Ely Shoshone Reservation" is also missing from the map.

18 • The analysis of Stateline Route (F-30) fails to mention the Pahrump Paiute Tribe (who is currently seeking Federal Recognition and a member of the CGTO). An especially important omission is the Pahrump Paiute Tribe's plan to have lands withdrawn for a new reservation in the Pahrump Valley once the Pahrump Paiute Tribe receives tribal recognition.

19 • The study has an "error of omission," when it states that impacts on cultural resources are regulated through Section 106 of the National Historic Preservation Act of 1966 (F-28). In fact, cultural resources are also regulated by the American Indian Religious Freedom Act of 1979 and the Native American Graves Protection and Repatriation Act of 1990. All three cultural resource acts specify the critical role of American Indian tribes and Indian organizations in the identification and assessment of cultural resources.

Conclusion - A Fatally Flawed Attachment F

The study in Appendix F is fatally flawed and should not be used for its' expressed purpose which is

> to support a dialogue with Nevada stakeholders...(and be) a basis for starting a formal discussion of this issue (Vol. 1, Appendix I, Attachment F, F-1).

20 The CGTO believes that a reasonable dialogue about potential impacts cannot be begun with Attachment F, because it fails to involve an American Indian assessment component in the cultural resources sections. Were a dialogue to begin without involving American Indian issues, it would be a violation of both cultural resource protection laws and regulations, and not be in keeping with past DOE/NV commitments to involve American Indian tribes and organizations in such discussions.

Consolidated Group of Tribes and Organizations Meeting
April 15-17, 1996

Recommendations

1. The CGTO recommends that a letter be written in support of the Timbisha Shoshone Tribe and their on-going land dispute with the U.S. Park Service. The CGTO recommends that all participating Tribes and groups write their own letters of support.

2. The CGTO recommends the expansion of the NTS American Indian Rock Art study to include: Monitor training, American Indian monitors and the development and inclusion of a Rock Art Study Subgroup for FY1996.

3. The CGTO recommends that the rate of the honorium provided to the Official Tribal Contact Representatives be increased to $200 per day. This request is based upon the lack of any increases by the US DOE since 1987.

4. The CGTO recommends the following individuals to serve as monitors for the NTS/American Indian Rock Art Study:

Western Shoshone Monitor:	Maurice Frank
Western Shoshone Alternate:	To Be Determined
Southern Paiute Monitor:	Orlando Bean
Southern Paiute Alternate:	Lulovi Miller
Owens Valley Paiute Monitor	Lee Chavez
Owens Valley Paiute Alternate:	Vernon Miller

5. The CGTO recommends the following individuals to serve as members of the American Indian Rock Art Subgroup for the NTS/American Indian Rock Art Study:

Western Shoshone:	Maurice Frank
Western Shoshone Alternate:	To Be Determined
Southern Paiute:	Richard Arnold
Southern Paiute Alternate:	Betty Cornelius
Owens Valley Paiute:	Michelle Soulajet
Owens Valley Paiute Alternate:	Lee Chavez

SOVEREIGN NATION 2 (CONTINUED)

6. The CGTO recommends the following individuals to serve as American Indian representatives for the NTS/NAGPRA repatriation efforts.

Western Shoshone:	Corbin Harney - spiritual leader
Western Shoshone :	Pauline Esteves
Southern Paiute:	Clifford and Yetta Jake - spiritual leaders
Southern Paiute Alternate:	Lalovi Miller
Owens Valley Paiute:	Neddeen Naylor
Owens Valley Paiute Alternate:	Eleanor Hemphill

7. The CGTO recommends that the DOE/NV provide travel expenses and per diem for the American Indian Writers Subgroup members to attend and present a paper on the American Indian Perspectives to the NTS/EIS at the Conference for Environmental Professionals in Houston, Texas on June 2-6, 1996. The estimated cost for this trip is $ 8,500 provided that registration is completed and air fare is reserved by May 15, 1996.

8. The CGTO opposes the Desert Research Institute's efforts to auction off replicas of ceremonial artifacts found on the Nevada Test Site for purposes of raising funds. This practice is viewed by the CGTO as a sacrilege and blatant exploitation of culturally sensitive information shared in confidence between American Indians and project archaeologists. This type of information was never intended to be used to place more importance and cultural value to certain artifacts in hopes of generating funds. The sale of these replicas serves no scientific value or protection of artifacts whatsoever. This practice must cease immediately.

SOVEREIGN NATION 3

WESTERN SHOSHONE NATIONAL COUNCIL
POST OFFICE BOX 210
INDIAN SPRINGS, NEVADA 89018-0210
TELEPHONE / FACSIMILE: (702) 879-5283

May 01, 1996

Tara O'Toole, M.D., M.P.H.
Assistant Secretary, E.S.H.
Department of Energy
Washington, D.C. 20585
By Fax

Dear Ms. O'Toole,

We are responding to your solicitation for comments to the Department of Energy's Draft Environmental Impact Statement for the Nevada Test Site and off site Locations within the State of Nevada (DOE/EIS-0243). Please include our comments to the record.

On January 15, 1995, the Western Shoshone National Council wrote to President Clinton with our concerns in relation to UN nuclear activities conducted within Western Shoshone Territory. We have attached: 1) the letter to President Clinton of January 15, 1996. 2) a copy of the Western Shoshone Nation Declaration of a Nuclear Free Zone, 3) a copy of the Treaty of Ruby Valley. These documents may serve as our comments on DOE/EIS-0243.

Sincerely,

Ian D. Zaharte
Assistant to Chief Yowell

WESTERN SHOSHONE NATIONAL COUNCIL
Post Office Box 210
Indian Springs, Nevada 89018-0210
Telephone/Facsimile: (702) 879-5203

January 15, 1996

The Honorable William J. Clinton
President of the United States
The White House
Washington, DC 20500

Mr. President:

This past year you were sent a notice of service reaffirming the sovereignty of the Western Shoshone Nation. The Western Shoshone National Council is the national governing body of the Western Shoshone people.

This letter is to inform you, as representative of the United States government, of a declaration passed by the Western Shoshone National Council on December 2, 1995 (copy enclosed). This declaration, which designates the interior of the Western Shoshone National boundaries as a nuclear-free zone, is now a part of Western Shoshone law.

The creation of this law is necessary because of our religious belief that our mother earth is the most sacred in all respects. As such only renewable resources may be used with the greatest of respect by humankind, non renewable resources are to be left alone. Your past nuclear related activities have violated our laws both natural and written laws.

Not only has your government conducted nuclear weapons testing at the Nevada Test Site on Western Shoshone land, but it is proposing a high-level nuclear waste repository on the edge of the Nevada Test Site at our sacred Yucca Mountain. Such activities and promotion of our lands for such activities are blatant and direct violations of the Treaty of Ruby Valley of 1863, both in spirit and in terms.

Among our concerns in relation to these nuclear issues are:

- Analysis of cumulative health risks, both short- and long-term, from past, present, and future radiological exposure
- Accurate measurement and monitoring of dosage and exposure scenarios to our citizens and to the general population
- Impact on the ecosystem of air, land, and water contamination both above and below ground
- Environmental restoration and waste management, including transportation-related risks and neutralizing radioactive waste
- Damage to historic and prehistoric archaeological, sacred, and religious sites, plants, and animals
- Socioeconomic effects on our economy, employment, and tourism, and political controversy over quality of life and risk perception
- Compensation and mitigation for victims and for damages to the ecosystem

Because these points are of mutual importance to us, there is much work to be done between our two nations. The United States government must become responsible for the damages caused by these and other treaty violations. The continued actions of the United States government through development, testing, and promotion of Western Shoshone lands for United States nuclear-related activities, in violation of the Ruby Valley Treaty and of our laws, can only be considered an act of genocide.

We expect your immediate response to our concerns.

Sincerely,

Raymond D. Yowell

Raymond Yowell, Chief
Western Shoshone National Council
Western Shoshone Nation

SOVEREIGN NATION 3 (CONTINUED)

WESTERN SHOSHONE NATION
DECLARATION OF A NUCLEAR FREE ZONE

WHEREAS, The people of the Western Shoshone Nation find the presence of radioactive materials, nuclear power facilities and nuclear weapons devices within the lands, the watersheds or the airshed of the lands of the Western Shoshone Nation, known in the Shoshone language as Newe Sogobia, as set forth in the Treaty of Ruby Valley of 1863, to be in conflict with the maintenance of the community's economic well-being, health, and general welfare, and,

WHEREAS, Nuclear weapons testing by the United States government on Western Shoshone lands, in direct conflict with Western Shoshone National Council law and policy, has left portions of Newe Sogobia strained and permanently contaminated with radiation, and,

WHEREAS, The aforementioned nuclear weapons testing by the United States government on Western Shoshone lands has already caused widespread cancer, bringing illness and death to Western Shoshone, members of other Indian nations, and the non-Indian people of the Great Basin region, and,

WHEREAS, The U.S. government continues to contaminate Western Shoshone lands at the Nevada Test Site by exporting and dumping radioactively and chemically contaminated soil and other waste products, and,

WHEREAS, The United States Geological Service has found that the aquifer under the Beatty radioactive waste dump site is about to become contaminated with long-lived radionuclides, endangering drinking water on Western Shoshone lands, and

WHEREAS, The government of the United States, against the expressed wishes of the Western Shoshone National Council, is proposing to store highly-irradiated fuel from commercial nuclear power plants, which will remain deadly for hundreds of thousands of years, at Yucca Mountain, within Western Shoshone lands, and,

WHEREAS, A high volume of truck transportation of radioactive wastes can be expected through the Western Shoshone Nation's lands and the surrounding region, increasing the likelihood of an accident and the rapid dispersal to the environment of deadly, long-lived radioactive wastes, and,

WHEREAS, The presence of radioactive waste dumps in the region, and the publicity surrounding it, will severely harm the economy of the Western Shoshone and neighboring peoples, and,

WHEREAS, Over 4,500 local communities throughout the world, 25 nations, and the regions of the Antarctic, Latin America and the South Pacific have been declared nuclear free zones, and,

WHEREAS, The National Council of the Western Shoshone encourages the developers of clean, renewable energy resources in order to create jobs that maintain the traditional Native American values of caretaking and balance with natural creation, and,

WHEREAS, The National Council of the Western Shoshone encourages research into radioactive waste neutralization techniques and demands the stabilization and/or clean up, if possible, of existing radioactive waste on the lands of the Western Shoshone Nation,

NOW, THEREFORE

SECTION 1. BE IT ORDAINED BY THE WESTERN SHOSHONE NATIONAL COUNCIL, That the following declaration be added to and made a part of the laws of the Western Shoshone Nation:

NUCLEAR FREE ZONE

1. DEFINITIONS.

FOR THE PURPOSES OF THIS ARTICLE, THE FOLLOWING DEFINITIONS APPLY

(A) "RADIOACTIVE MATERIALS" ARE ANY RADIOACTIVE WASTE PRODUCTS OR MATERIALS GENERATED, REFINED OR MADE RADIOACTIVE BY ANY UNITED STATES GOVERNMENT AGENCY OR PURSUANT TO FEDERAL OR STATE GOVERNMENT CONTRACT OR LICENSE, AND INCLUDING THAT WHICH THE UNITED STATES NUCLEAR REGULATORY COMMISSION CLASSIFIED AS LOW-LEVEL RADIOACTIVE WASTE AS OF JANUARY 1, 1989, BUT WHICH MAY BE CLASSIFIED AS BELOW REGULATORY CONCERN WASTE AFTER THAT DATE.

SOVEREIGN NATION 3 (CONTINUED)

(B) "NUCLEAR WEAPON" IS ANY DEVICE, THE PURPOSE OF WHICH IS USE AS A WEAPON, A WEAPON PROTOTYPE OR A WEAPON TEST DEVICE, THE INTENDED DETONATION OF WHICH RESULTS FROM THE ENERGY RELEASED BY FISSION AND/OR FUSION REACTIONS INVOLVING ATOMIC NUCLEI. "NUCLEAR WEAPON" INCLUDES THE WEAPON'S GUIDANCE AND PROPULSION SYSTEM AND TRIGGERING MECHANISM, I.E., THE MEANS OF TRANSPORTING, GUIDING, PROPELLING, TRIGGERING, OR DETONATING THE WEAPON, PROVIDED THAT SUCH MEANS IS DESTROYED OR RENDERED USELESS IN THE NORMAL TRANSPORTING, GUIDING, PROPELLING, TRIGGERING, OR DETONATION OF THE WEAPON.

(C) "PERSON" MEANS A NATURAL PERSON, AS WELL AS A CORPORATION, INSTITUTION, OR OTHER ENTITY.

2. PROHIBITION OF STORAGE, USE OR DISPOSAL OF RADIOACTIVE MATERIALS.

EXCEPT AS SPECIFICALLY EXEMPTED IN THIS ARTICLE, NO PERSON SHALL IMPORT, STORE, INCINERATE, TREAT, PROCESS, OR DISPOSE OF RADIOACTIVE MATERIALS, FOR ANY PURPOSE, WITHIN THE LANDS OF THE WESTERN SHOSHONE NATION, OR WITHIN LANDFILLS OR INCINERATORS OWNED OR LICENSED BY THE WESTERN SHOSHONE NATION.

3. PROHIBITION OF NUCLEAR WEAPONS WORK.

NO PERSON SHALL KNOWINGLY, WITHIN THE LANDS OF THE WESTERN SHOSHONE NATION, DESIGN, TEST, PRODUCE, DEPLOY, LAUNCH, MAINTAIN, OR STORE NUCLEAR WEAPONS OR COMPONENTS OF NUCLEAR WEAPONS.

4. PROHIBITION OF NUCLEAR REACTORS.

NO PERSON SHALL CONSTRUCT, OR OPERATE, A NUCLEAR REACTOR WITHIN THE LANDS OF THE WESTERN SHOSHONE NATION.

5. PROHIBITION OF URANIUM MINING AND MILLING.

NO PERSON SHALL CONSTRUCT OR OPERATE A URANIUM MINE OR MILLING OPERATION WITHIN THE LANDS OF THE WESTERN SHOSHONE NATION.

6. TRANSPORTATION OF RADIOACTIVE MATERIALS.

NO PERSON SHALL TRANSPORT RADIOACTIVE MATERIALS TO OR THROUGH THE LANDS OF THE WESTERN SHOSHONE NATION.

7. MIGRATION OF RADIOACTIVE MATERIALS.

NO PERSON OR OTHER NATION SHALL ALLOW THE MIGRATION OF RADIOACTIVE MATERIALS FROM NEIGHBORING LANDS INTO THE LANDS OF THE WESTERN SHOSHONE NATION.

8. NUCLEAR FREE ZONE SIGNS.

THE WESTERN SHOSHONE NATIONAL COUNCIL SHALL POST AND MAINTAIN APPROPRIATE SIGNS AT ALL RECOGNIZED ENTRANCES TO THE LANDS OF THE WESTERN SHOSHONE NATION, AT ENTRANCES TO THE YUCCA MOUNTAIN FACILITY AND THE NEVADA NUCLEAR TEST SITE, AND AT THE NATIONAL COUNCIL OFFICE IN CACTUS SPRINGS, PROCLAIMING THE WESTERN SHOSHONE NATION'S STATUS AS A NUCLEAR FREE ZONE.

9. ENFORCEMENT.

EACH VIOLATION OF THIS SECTION SHALL BE PUNISHABLE BY A $1,000,000 FINE. EACH DAY OF VIOLATION SHALL BE DEEMED A SEPARATE VIOLATION. ENFORCEMENT WILL BE BY DULY AUTHORIZED AGENTS OF THE WESTERN SHOSHONE NATION.

THIS DECLARATION IS HEREBY ENACTED ON THIS 2ND DAY OF DECEMBER, 1993 BY CONSENSUS OF THE WESTERN SHOSHONE NATIONAL COUNCIL.

Raymond R. Yowell

RAYMOND YOWELL, CHIEF

Attachments: Boundary Description and map of Newe Sogobia as defined by the Western Shoshone National Council.

SOVEREIGN NATION 3 (CONTINUED)

Treaty of Ruby Valley 1863

SOVEREIGN NATION 4

American Indian Comment

Environmental Impact Statement for Nevada Test Site
And Off-site Locations in the State of Nevada

Correction to Add to: V.1, Part B, Chapter 5
5.1 Nevada Test Site
5.1.1.12 Environmental Justice

The sentence is incorrect when it states on Line 16 "While not physically located in Clark, Nye, or Lincoln Counties, these groups..." The Yomba Shoshone Tribe, the Moapa Paiute Tribe, the Las Vegas Paiute Tribe, the Pahrump Tribe, and the Las Vegas Indian Center are all a part of the CGTO and all are located in these counties. In addition, all of the members of the CTGO have well established traditional or historic cultural ties to the NTS, so it is not clear why only Indian people in Clark, Nye, and Lincoln Counties would be especially impacted, to the exclusion of others. Note the American Indian cultural resource region of influence map (4-203). it does not imply some groups who live closer to the NTS are more concerned about cultural resources than less further away.

Note: Other portions of Chapter 5 refer back to the 5.1.1.12, so this text should be clarified.

SOVEREIGN NATION 5

COLORADO RIVER INDIAN TRIBES

Colorado River Indian Reservation

ROUTE 1, BOX 23-B
PARKER, ARIZONA 85344
TELEPHONE (602) 669-9211

May 15, 1996

Mary Ellen Giampaoli
Department of Energy
2753 South Highland
Las Vegas, Nevada 89109

Dear Mr. Giampaoli:

We appreciate the opportunity to comment and endorse the Native American Resource Document to be included in the Environmental Impact Statement (EIS) for the Nevada Test Site and Off site Locations in the State of Nevada. The Native American Resource Document was produced in response to consultation required by the NTS - EIS, in accordance with DOE Order 123.2, American Indian Tribal Government Policy. The Department of Energy initiated and fulfilled their obligation as required by law to consult with Tribal governments in regards to the preservation of Native American cultural resources on the NTS lands.

The cultural resource management on the NTS lands and surrounding areas has seen the forming of a group called the Consolidated Group of Tribes and Organizations (CGTO), of which the Colorado River Indian Tribes has a representative, to interact with Field Operations and projects of the DOE. The primary focus for the group, who are recognized as culturally affiliated to the lands and surrounding areas, has been the preservation of cultural resources.

1 From this group came the American Indian Writers Subgroup (AIWS) who dealt directly with cultural issues and provided recommendation to the D.O.E. on the preservation of Native American religion, culture, society, and economy. As a result, the Native American Resource Document is a positive move to bring forth concerns of tribal governments regarding long-term impacts to cultural resources on NTS lands and surrounding areas. Other areas of concern include but are not limited to are:

SOVEREIGN NATION 5 (CONTINUED)

- long-term effects of radiation exposure
- nuclear waste transportation and storage
- environmental justice
- health
- socioeconomic

1 cont.

We believe and stress the importance of addressing these concerns for future posterity not only for Native people but for mankind. The continuity of government - to - government protocol through communication paves the way as a guide to reach and resolve above stated concerns through establishing a long range management plan for the NTS lands.

We commend the participation of all involved in the D.O.E. NTS-EIS project implementation. Without the dedication, the project would not have taken place.

Sincerely,

Daniel Eddy Jr.
Chairman

Colorado River Indian Tribes

STATE GOVERNMENT 1

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

May 1, 1996

Mr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
Nevada Operations Office
PO Box 14459
Las Vegas, Nevada 89114

Dear Mr. Elle:

Enclosed are comments from the State of Tennessee, Department of Environment and Conservation for the *Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, January 1996, Document No. DOE/EIS 0243.*

Please also note a copy of an enclosed letter from Governor Don Sundquist to Secretary Hazel O'Leary in reference to long standing policy held by the State of Tennessee concerning DOE waste management.

Your consideration of our interests is greatly appreciated.

Sincerely,

David Galbreath
Staff Coordinator for State NEPA Reviews

Enclosures

c: Commissioner Justin Wilson
Ken Bunting, Administrator
Earl Leming, DOE Oversight
NEPA Coordination File
Jim Hall, Manager, DOE ORR

STATE GOVERNMENT 1 (CONTINUED)

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DOE OVERSIGHT DIVISION
761 EMORY VALLEY ROAD
OAK RIDGE, TENNESSEE 37830-7072

RECEIVED BY
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IN ENVIRONMENTAL POLICY OFC

April 17, 1996

Mr. Justin Wilson, Commissioner
Tennessee Department of Environment and Conservation
c/o Tennessee Environmental Policy Office
14th Floor L&C Tower
401 Church Street
Nashville, Tennessee 37243 - 1553

Dear Commissioner Wilson:

Document NEPA Review – Draft Environmental Impact Statement: Nevada Test Site and Off-site Locations in the State of Nevada, DOE/EIS 0243, January 1996

The Tennessee Department of Environment and Conservation, DOE Oversight Division has reviewed the above document for your concurrence and transmittal to the following DOE office:

Mr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
Nevada Operations Office
PO Box 14459
Las Vegas, NV 89114

The Division's review was conducted in accordance with the requirements of the National Environmental Policy Act (NEPA) and associated implementing regulations 40 CFR 1500 - 1508 and 10 CFR 1021.

After review and research, the Division recommends that DOE consider Alternatives 1 or 3, or some variation of these alternatives for the project preferred alternative. The Expanded Use Alternative would include support for ongoing DOE/NV mission categories as described under Alternative 1 and provide for increased use of the Nevada Test Site and its related resources and capabilities.

Commissioner Justin Wilson
Page Two
April 17, 1996

The Department of Energy has several Environmental Impact Statements that are ongoing that involve the Nevada Test Site. Because of expensely limited facilities for suitable disposal of radioactive waste, continued disposal operations at the Nevada Test Site are critical to waste management and environmental restoration planning at all DOE facilities.

The Division expects DOE to select alternatives that will facilitate sound environmental decisions for dealing with the many intricate waste management issues facing DOE sites. One of these issues is the disposal of Oak Ridge Reservation low-level wastes at the Nevada Test Site. Currently the Oak Ridge Reservation is awaiting approval for shipment of low-level wastes to the Nevada Test Site.

The State of Tennessee has noted in comments on the Waste Management Programmatic Environmental Impact Statement (PEIS) that the Oak Ridge Reservation does not possess the appropriate geologic or hydrologic character for large scale waste deposition activities. The Division is sensitive to the State of Nevada's concerns in dealing with the environmental impacts associated with DOE activities. However, it is our desire that decision-makers balance the environmental concerns of the State of Nevada with National needs and select alternatives that best limit impacts to the environment, and protect the human health of citizens affected by DOE's mission.

If you have any questions, please contact Bill Childress at (423) 481-0995 or Steve Nuley at (423) 481-0163.

Sincerely

Earl C. Leming
Director

COPY

STATE OF TENNESSEE

DON SUNDQUIST
GOVERNOR

December 14, 1995

Secretary Hazel O'Leary
United States Department of Energy
1000 Independence Avenue, S.W.
Room 7A-257
Washington, D.C. 20585

Dear Secretary O'Leary:

Recently, agencies of the State of Tennessee submitted comments in accordance with the requirements of the National Environmental Policy Act (NEPA) for the *Draft Waste Management Programmatic Environmental Impact Statement (D-PEIS) for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste, DOE/EIS-0200 D, August 1995*. I have elected to communicate with you directly to insure that the State of Tennessee's policy interests concerning this important D-PEIS are clearly communicated.

My administration strongly opposes and will continue to oppose any attempt by DOE to "site" large waste deposition activities in Oak Ridge, Tennessee. It is disappointing to me that the United States Department of Energy (DOE) continues to seriously consider another short sighted option in a tiring string of waste deposition assessments for Oak Ridge. My administration views all of the alternatives in the current "Waste Management" D-PEIS that consider disposal of low level mixed waste and low level waste on the Oak Ridge Reservation as technically unsound.

It is commonly known, and widely supported inside and outside of Tennessee that Oak Ridge is one of several sites in the DOE complex that does not possess the appropriate geologic or hydrologic character for such large scale waste deposition activities as currently proposed in your D-PEIS. The National Governor's Association/DOE Disposal Working Group specifically recommended that the Oak Ridge complex be considered only for disposal of a very restrictive list of radionuclides due to an emphasis on protection of human health and the environment.

Your own agency's data summary for waste management sites in the current D-PEIS indicates that the Oak Ridge Reservation currently produces the highest "population dose" among the 54 DOE sites around the nation. We believe that a large scale low level mixed waste and low level waste disposal facility at Oak Ridge would add additional risk to an already unacceptable situation.

State Capitol, Nashville, Tennessee 37243-0001
Telephone No. (615) 741-2001

STATE GOVERNMENT 1 (CONTINUED)

Page Two
Secretary Hazel O'Leary
December 14, 1995

Despite our concerns, the State of Tennessee recognizes and appreciates the historic role Oak Ridge, Tennessee has played for the nation and the economic contributions DOE has made to the Oak Ridge community and Tennessee over the past 50 years. We will continue to promote and will accept our responsibility to the nation as a potential site for one or several of the complex suite of activities that DOE must perform. However, I believe that DOE's continued consideration of the most technically unsuitable disposal site in the DOE complex for large scale waste deposition is truly a waste of precious national and state resources. I urged you to invest your agency's energies in alternatives that better meet both the short and long term interests of waste storage.

Sincerely,

Don Sundquist

Don Sundquist

c: United States Representative Zach Wamp
United States Senator Fred Thompson
United States Senator Bil Frist
Commissioner Don Dills, Tennessee Department of Environment and Conservation
US DOE Headquarters PA Office
Mr. Greg Rudy, Acting Director, Office of Fissile Materials Disposition
NEPA File

STATE GOVERNMENT 2

BOB MILLER
Governor

STATE OF NEVADA

JOHN P. COMEAUX
Director

DEPARTMENT OF ADMINISTRATION
Capitol Complex
Carson City, Nevada 89710
Fax (702) 687-3983
(702) 687-4065

May 3, 1996

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114

Re: SAI # 95300110: State of Nevada Clearinghouse Comments on the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (DOE/EIS-0243)

Dear Dr. Elle:

Thank you for providing the State of Nevada the opportunity to review and comment on the Draft Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) and Off-Site Locations in the State of Nevada. As you know, the State of Nevada submitted extensive scoping comments on the Notice of Intent and the Implementation Plan for the subject EIS. In addition, we conducted a detailed informal review of the preliminary draft Framework for a Resource Management Plan (RMP), i.e., Volume 2 of the EIS.

With the exception of the Draft RMP, our review of the main body of the document indicates that the EIS is inadequate in several major areas. Overall, the document fails to substantively describe or evaluate the environmental effects of alternatives that may be adopted, either entirely or in part, for the yet to be quantified proposed action for the EIS. As you know, the Draft EIS does not contain a proposed action. Subsequently, this affected the State's ability to conduct a detailed review of potential environmental impacts of the numerous alternatives and actions under consideration.

If DOE intends to prepare a credible Final EIS for the Nevada Test Site, federal officials must pay careful attention to the detailed comments presented in the attached compendium. The State's comments were prepared so that the objections to the document would be clearly understood. Accordingly, we believe that the remedies necessary for rendering the Final EIS acceptable will require substantial textual and substantive changes throughout the body of the document. The State's comments include a summary of major issues, followed by a detailed section-by-section review. We expect DOE to address both the summary and the detailed review in the EIS comment response document. We have incorporated review comments from other executive branch State agencies directly, or as attachments.

We recognize that the ongoing moratorium on nuclear testing has significantly altered the scope of the nuclear testing mission at the NTS. The impact of this reduced testing mission has resulted in significant labor force reductions at the test site from nearly 10,000 in 1989 to less the 3,000 today. While it is difficult to assess the subsequent effects these reductions have had on the NTS EIS, other factors have unquestionably complicated the EIS process.

The scope and content of the alternatives presented in the EIS were developed to assess a reduced testing program, but they were also intended to "bound" several new national defense and non-defense program alternatives proposed through a number of DOE Programmatic Environmental Impact Statements (PEIS). Linking the NTS EIS to these national program alternatives (as per NEPA "tiering" requirements) was addressed under the NTS EIS Alternative labeled "Expanded Use." Unfortunately, the manner in which the Expanded Use Alternative was assessed in the Draft EIS, along with a conspicuous misrepresentation of the No Action Alternative, served only to further obfuscate the scope and content of the NTS EIS.

The last complication levied on the EIS development process was a recent directive from the Secretary of Energy that required all new EIS documents to meet a "start to finish schedule" of only 15 months. This requirement seems unreasonable for this EIS. The NTS is the only contiguous site where more than 900 nuclear tests were conducted, causing widespread contamination. The NTS is also the largest site in the DOE complex, containing an estimated 40 percent of all DOE land holdings.

Given all these considerations, including the fact that it has been nearly 20 years since DOE prepared a comprehensive Site-Wide EIS for the Nevada Test Site, State officials were not surprised to find the EIS substantively inadequate. Nevertheless, the Nevada Test Site must undergo a comprehensive environmental analysis before any new major federal actions are undertaken at the site. In consideration of the requirements of NEPA, anything less is not acceptable. If you have any questions about these comments, please contact me or John Walker (NWPO) at (702) 687-3744.

Sincerely,

Julie Butler

Julie Butler, Coordinator
State Clearinghouse DOA/SPOC

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STATE OF NEVADA COMMENTS

ON

THE DEPARTMENT OF ENERGY'S

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR THE NEVADA TEST SITE AND OFF-SITE

LOCATIONS IN THE STATE OF NEVADA

May 3, 1996

STATE OF NEVADA COMMENTS
ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE NEVADA TEST SITE AND OFF-SITE LOCATIONS IN
THE STATE OF NEVADA

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Appendix 1
Other State Agency Comments

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STATE OF NEVADA COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NEVADA TEST SITE AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA

COMMENT SUMMARY

The sole commendable component of this draft Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) is Volume 2, Framework for Resource Management Plan (RMP). This alone reflects the ongoing environmental policy changes occurring within the Department of Energy (DOE). The remainder of the draft EIS is poorly conceived and executed in the manner typical of many of DOE's National Environmental Policy Act (NEPA) compliance documents. The scientific, methodological, and empirical aspects of Volume 1 of the EIS are deficient well beyond acceptable professional standards for environmental impact assessment and NEPA compliance. Documentation concerning the conceptual bases and methodologies used for assessing impacts is exceedingly poor throughout the EIS. Omissions, oversights, discrepancies, and contradictions are commonplace. In addition, by not putting forth a proposed action in the EIS while simultaneously distorting the No Action Alternative, DOE has served only to encumber the State's ability to conduct a detailed review of the potential environmental impacts of the numerous alternatives and actions under consideration.

Furthermore, omissions of data and information throughout the draft EIS reflect a lack of attention concerning the use of documented environmental information that is readily available. The potential extent of this oversight repeatedly undermines any confidence that DOE may wish reviewers of the EIS to gain. More seriously, the obvious shortcomings contained in the draft EIS seem to reflect a lack of concern for truthfulness

and openness regarding stakeholder interests in DOE's current and future management of the NTS.

The State's comments were mindfully crafted (by page and line) so that objections to the document are clearly articulated. We believe that the remedies necessary for rendering the Final EIS acceptable will require textual changes throughout the body of the document. Major points and highlights of particular concern to the State's review of the subject EIS are presented in this summary. Detailed comments follow after the summary.

NO ACTION ALTERNATIVE

1 A review of the existing public land orders that established the NTS clearly show that certain activities proposed in the EIS are inconsistent with both the purpose and intent of those orders. For example, the NTS was not established to serve as a waste disposal site for off-site generated defense wastes. In fact, the description of the NTS waste management program described under Alternative 2 (Discontinue Operations - Section 3.1.2.2) aptly describes the type of on-site disposal program that would be remotely consistent with the existing site mission stipulated under the public land orders.

In the State's scoping comments for this EIS, we indicated that "the only action appropriately described as no action at the NTS includes only national defense and nuclear weapons testing activities defined under the public land orders as consented to by the State of Nevada for the NTS withdrawal." We further stated that the activities described by DOE in its Notice of Intent as "No Action" was in fact "Expanded Use." The State's position on this issue has not changed. Hence, receipt of waste from out-of-
2 state waste generators can only be assessed in the EIS as "Expanded Use," not as part of the site's continuing current operations.

In a related matter, State officials insist that DOE must safeguard future generations from exposure to radioactive contamination at the NTS. Such prevention, moreover, can only be achieved through permanent control of the contaminated surface and subsurface areas at the site. To achieve such safeguards, however, exclusive federal jurisdiction of these contaminated areas must be acquired in perpetuity. Alternatively, the only activities that can be performed on the NTS are those that were originally consented to by the Nevada Legislature, and/or activities that may not require exclusive jurisdiction.

In addition, as the original weapons testing activities are phased out, the site must be "cleaned" to meet natural background radiation levels and returned to public land status. However, since "cleanup" to active natural background conditions is not proposed, the EIS must discuss how DOE intends to acquire exclusive jurisdiction over
3 certain NTS lands, given the constitutional requirement that exclusive jurisdiction may only be acquired in the manner set forth in Art. I, Section 8, Clause 17 of the United States Constitution. Of particular interest to Nevada in this regard is the requirement that DOE obtain the consent of the Nevada Legislature in order to acquire exclusive jurisdiction over the particular sites.

If the DOE intends to exercise less than exclusive jurisdiction, however, then the
4 EIS must propose alternatives and actions that discuss the rationale upon which DOE bases its assumption that it can accomplish the isolation of contamination and radioactive waste at the site while preventing human intrusion. These are important considerations for the State, since it is the State's responsibility to protect the health and welfare of its residents.

RESOURCE MANAGEMENT PLAN

5 The relationship of the Framework for Resource Management Plan to the
6 remainder of the EIS should be stated early in Volume 1. An explanation is needed on

6 cont. DOE's changing environmental policy that involves resource stewardship and ecosystem management. Much of this information is contained in Volume 2. However, both volumes of the draft EIS fail to acknowledge DOE policies regarding ecosystem-based initiatives, comprehensive land use planning, life cycle asset management, and resourceful reuse of DOE-controlled lands. In addition, Volume 2 of the draft EIS should be strengthened by discussing the concepts of resource stewardship and sustainable development implied by DOE's Land and Facility Use Policy. This should include the role to be played by ecosystem management, especially regarding conservation of undisturbed land as an important resource for future development by DOE. The concept of the health of ecosystems like those of the NTS and surrounding areas being tied to soil-water-biota interactions also is directly associated with the importance of minimizing site disturbances as a means of conserving undisturbed land.

9 Also, State officials contend that the Record of Decision (ROD) for the EIS should contain a schedule for implementing the RMP. By including such a schedule, DOE will demonstrate an enforceable commitment to the RMP process. This commitment will ensure that new facilities are sited using a systematic approach that will sustain and preserve the natural environment at NTS.

YUCCA MOUNTAIN

10 A discussion is needed early in Volume 1 on the reasons the portion of the NTS dedicated to the Yucca Mountain Project and the project itself are excluded from the EIS.

11 The EIS should make use of the environmental studies conducted by the Yucca Mountain Project. This information is extensive and addresses many of the database gaps that exist for the NTS, such as soil productivity, revegetation success, and natural rehabilitation.

NATIONAL ENVIRONMENTAL RESEARCH PARK

12 The National Environmental Research Park program at the NTS and the activities involved should be included in the EIS. This is a major omission from the draft EIS.

TIMBER MOUNTAIN CALDERA

13 More information is needed regarding the Timber Mountain Caldera National Natural Landmark, such as what this designation signifies, environmental studies already performed or planned for the area, and DOE activities that have occurred within the landmark boundaries.

PERFORMANCE ASSESSMENT

14 The Final EIS must contain a discussion about the Department's plan to address the Defense Nuclear Facilities Safety Board's Recommendation 94-2. That recommendation outlines problems and issues concerning DOE's low-level radioactive waste management and disposal program. DOE's subsequent response to the Board's recommendations (i.e., DOE's implementation plan), as well as a discussion of pending revisions and changes to the Department's waste management order (5820.2A) should be discussed in the Final EIS. These discussions are particularly relevant concerning DOE's potential plans to proceed with a co-disposal decision for dissimilar waste types at the NTS. Dissimilar wastes classified as low-level, special case, or other wastes considered not appropriate for shallow land burial (i.e., high activity low-level waste, transuranic waste, etc.) are considered under the EIS Expanded Use Alternative for disposal in a single contiguous facility at the NTS Area 5 disposal site. To proceed with such an action, State officials contend that DOE must address the problems associated with the "composite effects" defined by the Board's recommendation 94-2 (i.e., the disposal sites ability to meet performance objectives for confining future, current, and pre-1988 waste

15 from the biosphere). The State also contends that before any more waste is disposed at

15 (cont.) either Area 3 or Area 5, DOE must complete a performance assessment for each site. Only then would DOE be in compliance with its own waste management orders.

Failure to address these disposal issues could subject federal decision makers to consider actions that may harm the environment and thus create unpredictable health risks for future generations. In other words, avoiding action concerning the Board's recommended detailed composite performance analysis will likely cause additive risks through additional waste disposal, which might cause unknown and unpredictable environmental impacts to the human and natural environments.

RADIONUCLIDE SOURCE TERMS AND SURFACE CONTAMINATION

16 More detailed information is needed on radiological source terms and surface contamination throughout all environmental media at the NTS, including the locations where radionuclide levels exceed regulatory standards. This includes the Tonopah Test Range, the Project Shoal Area, and the Central Nevada Test Area. The EIS provides certain data which indicates that nearly 40 percent of the source term at the site is bound up in the groundwater. However, statements in the EIS suggest that there is considerable uncertainty about the actual quantity of radioactivity that could enter the groundwater in the future from the release of radionuclides from the melt glass and cavity rubble within each shot cavity. While the EIS suggests that future studies are needed to reduce the current levels of uncertainty concerning both the mechanisms and consequences of 17 radionuclide transport via groundwater flow at the NTS, no information is provided about the radionuclide source term that is contained in soils above the water table (i.e., in the unsaturated zone).

18 State officials do acknowledge that DOE has sponsored two long-term studies concerning potential movement of radionuclides beneath the NTS: the Hydrologic

18 (cont.) Resources Management Program and the Long-Term Hydrologic Monitoring Program. However, initial conclusions from these programs are muddled, and results to date were not discussed in detail in the EIS. Finally, the EIS suggests that there are over 200 significantly contaminated surface areas that collectively occupied 52 square miles, yet 19 the EIS fails to provide a detailed map or suitable listing of these areas. Because radiological contamination is one of the primary environmental impacts caused by nuclear testing, the Final EIS must provide this information.

SPECIAL CASE WASTE (SCW)

The Department of Energy's NEPA compliance strategy for the management and disposition of SCW and its relationship to the NTS EIS must be clarified in the Final EIS. State officials are aware that SCW has been disposed at NTS in the past. Yet DOE has never conducted either a programmatic or site-specific NEPA analysis for the management and disposition of this waste type. SCW is generally long-lived, contains high concentrations of radionuclides, and thus represents a significant threat to human health and the environment. SCW must be isolated from the biosphere for thousands of 20 years.

The NTS EIS contains language that clearly indicates that the disposal capability at NTS for wastes defined as "inappropriate for shallow land disposal" (i.e., SCW) will be increased under Alternative 3, Expanded Use. As indicated in the detailed comments presented below, State officials assume that this refers to expanding waste disposal through the "greater confinement disposal boreholes concept" and/or other deep trenches at the Area 5 disposal facility.

Accordingly, if either the Area 5 or Area 3 disposal sites at NTS are considered for 21 confinement of SCW, the difficulties associated with meeting the waste acceptance criteria for dissimilar waste types must be acknowledged and assessed. Additionally,

STATE GOVERNMENT 2 (CONTINUED)

22 DOE must complete a programmatic analysis at the weapons complex level that evaluates alternative storage and disposition strategies for SCW. In fact, State officials understand that alternatives for storage and disposal of DOE's SCW, along with Greater-Than-Class-C waste (GTCC), will be evaluated in a forthcoming Supplemental Environmental Impact Statement tiered from DOE's Waste Management Programmatic EIS.[1] This EIS will likely consider a disposal strategy which proposes co-disposal of SCW with GTCC waste in a single NRC-licensed disposal facility. This is an important policy consideration for Nevadans, since the proposed repository at Yucca Mountain would be one of the candidate disposal sites for such an activity. This NTS EIS fails, however, to discuss any of these issues. Hence, DOE's NEPA compliance strategy for the management and disposition of SCW waste and its relationship to the NTS EIS must be clarified.

ENVIRONMENTAL CONSEQUENCES

23 The basis for finding no adverse impacts should be given in each case, and the data to substantiate the finding should be cited. The draft EIS relies far too much on unsubstantiated subjective judgement that has no basis in fact. This shortcoming occurs even where scientific and technical information for a topic exists. Credible attention to impact assessment methods and analyses is lacking in the draft EIS, and where methods are cited, their usefulness for assessing environmental impacts is questionable. Current state-of-the-art environmental assessment methodologies should be adopted by DOE for the NTS EIS.

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CUMULATIVE IMPACTS

25 The coverage of cumulative impacts in the EIS is unnecessarily deficient with respect to methods of analysis, and none of the analyses discussed are empirically based.

[1] Notice of Inquiry: Strategy for Management and Disposal of Greater-Than-Class-C Low-Level Radioactive Waste. Federal Register Notice, Vol. 60, No. 48, Monday, March 13, 1995.

STATE GOVERNMENT 2 (CONTINUED)

25 cont. While there is a considerable body of DOE literature regarding methods for analyzing cumulative environmental impacts, it appears that none of this literature was used in the EIS. The presentations of cumulative impacts in the EIS are subjective in nature and thus, unacceptable, given current scientific approaches for assessing cumulative environmental impacts.

26 A determination of whether actions are cumulative should be focused on the proposed action defined in the EIS instead of on several loosely defined alternatives or other unrelated factors. Since DOE has chosen not to put forth a specific proposed action in the draft EIS, and given the variable content of the existing alternatives, the Department's presentation of potential cumulative impacts is understandably deficient. This is unfortunate, since certain "reasonably foreseeable future actions", such as massive increases in low-level and mixed waste shipments (from 6,800 to 25,000 shipments in ten years) along with shipments of special nuclear materials are conceivable and should have been subjected to a detailed cumulative impact analysis in the EIS. However, no such analysis is provided. The potential cumulative impacts from the transportation, treatment, storage, and disposal of both radioactive waste and special nuclear materials are simply not assessed in the draft EIS. Evidently, DOE has decided that no cumulative human health risks or risks to the environment would occur from these and other reasonably foreseeable future actions within the region of influence of the NTS. For example, no mention is made of how cumulative impacts from the Yucca Mountain Project will be considered, and the claim that such impacts will build from those in the NTS EIS rings hollow in the face of the inadequacies of the draft EIS. Accordingly, if a proposed action for the Final EIS is adopted that includes the transportation, treatment, and storage/disposal of special nuclear materials and radioactive waste at the NTS, then an objective, scientifically based cumulative impact analysis must be prepared.

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SOCIOECONOMIC IMPACTS

32 The treatment of the possible socioeconomic effects from NTS activities for all of the alternatives is wholly inadequate. The draft EIS presents an overly optimistic picture of the "economic" implications of proposed alternatives and is entirely silent with respect to the "socio" or social/cultural/political impacts, which, in the case of controversial activities such as those proposed for NTS, can be very significant.

33 The analysis of economic effects focuses solely on those effects that are driven by employment and population increases resulting from various alternatives, and then does so only with respect to their potentially positive contributions to state and local economics. Such analysis is almost irrelevant, since, even for the most ambitious alternative, job and population growth related to NTS are not projected to be more than 1% of the total for Clark County and just a fraction of 1% for the State of Nevada. Even for Nye County, NTS-related population growth, job growth, and revenue impacts are relatively small (e.g., 3% or so increase in jobs in 2005) since most workers and their families are projected to live in Clark County.

34 What the EIS fails to assess, and what must be included in the Final EIS if economic impacts to affected jurisdictions and the State as a whole are to be adequately evaluated, are the implications of projected NTS population increases (related to employment) that do not pay for themselves in terms of the revenue (taxes, fees, etc.) generated. NTS-related growth has the potential to cause negative impacts in a variety of "standard" economic areas. While most types of economic growth and diversification are viewed positively in Nevada, one result of the State's rapid growth[7] is that public services and facilities are already under considerable stress. Nevada's tax structure is such that any growth that does not directly increase the contribution of revenues from visitors (i.e.,

[7] Nevada is currently the fastest growing state in the country, and the Las Vegas Valley has been designated the fastest growing metropolitan area

sales and gaming taxes) will not pay its own way, except for mining with its legislative revenue tax. In recent years, the phenomenal growth of gaming and tourism has kept pace with other forms of development and population growth. However, it cannot be assumed that this will remain true into the next century. These standard economic effects associated with additional NTS-related population growth could, therefore, generate negative fiscal impacts for state and local jurisdictions in the event that tourism/gaming growth fails to maintain its current rate of increase. (As was seen during the recession in the early 1990's, gaming/tourism does not have to actually decline for serious negative consequences to occur. The rate of growth merely needs to slow.)

35 The most significant omission in the draft EIS with respect to socioeconomic impact assessment, however, is the lack of any attempt to identify potential impacts to the State that could result from the stigmatizing effects of various NTS activities, particularly those involving nuclear, hazardous, toxic, and related materials. Research conducted by the State of Nevada has demonstrated that nuclear-related activities (i.e., storage facilities, radioactive materials transportation, etc.) have the potential to result in significant socioeconomic impacts at all levels within the state, from the local communities to the state government. These effects originate in intense negative perceptions and avoidance behaviors by the public in response to nuclear facilities/activities which, combined with the unique vulnerability of the Nevada economy to changes in its public image, could produce large negative impacts. The great public and media interest in things nuclear makes it almost certain that any association with these negative perceptions will adversely affect Nevada's attempts to attract tourists, conventions, retirees and other in-migration, and new business investments. This could be especially troublesome in the event of a nuclear waste accident that was in or near Las Vegas, one of the world's major tourist destinations and the dominant contributor to Nevada's economy and tax revenues. While there is considerable uncertainty about the federal government's ability to manage radioactive materials safely and about future public responses to accidents and events, it is clear that over the last half century, the public has developed a very strong aversion to

such wastes and the facilities associated with them. The conclusion of the Nevada researchers who have studied the issue is that, under certain circumstances, stigma impacts could be very negative and very large.

The existing research on stigma effects and potential impacts provides a viable theoretical and methodological base so that DOE should be able to provide a detailed assessment of these types of impacts on Nevada's economy, public revenues, public services, and community quality of life. These assessments should take into account the increasingly competitive gaming and tourist marketplaces and the important role that any negative perceptions could have. It is very possible that, through the social amplification of risk process, even relatively minor events or accidents could have serious economic consequences. Such impacts could dwarf any expected benefits to be derived from NTS employment and spending. Such "stigma" effects of NTS activities will be reflected in "standard" economic, fiscal, and other impacts that can be characterized in the same units of measurement as standard effects, such as tourist visitations causing employment, tax revenues, and other social responses. In fact, the standard and stigma impacts should be seen as interacting forces working on the same social-economic system. It is essential
36 that the NTS EIS thoroughly assess "standard" and "stigma" impacts in a comprehensive and integrated manner.

Research has also shown that there is widespread opposition to radioactive waste disposal and transportation based on health and safety concerns, the potential threats to the economy, the creation of divisive policy issues, distrust of the Department of Energy, and the fear of diminished quality of life. This public opposition is itself an impact that
37 the EIS must address, together with the implications for long term socioeconomic disruptions that may derive from it.

COOPERATING AGENCIES

Insufficient use has been made by DOE of cooperating federal agencies for input
38 into the NTS EIS. This is apparent in both Volume 1 and Volume 2 of the draft EIS, especially with regard to ecosystem management policies and activities of the agencies of the Department of Interior.

BIG EXPLOSIVE EXPERIMENTAL FACILITY

The purpose of the Project-Specific Environmental Analysis for the Big Explosives Experimental Facility should be clarified, including the status of NEPA
39 compliance for the facility. The information presented in the draft EIS does not include impact analyses. It appears that DOE is attempting to satisfy NEPA requirements for this facility through the NTS EIS, rather than tiering, as required by federal regulations (CEQ 1508.28).

LYNER COMPLEX (Review of Classified Appendix J)

A review of the classified appendix of the EIS was undertaken by a qualified State official, and it was determined that the impact analyses of certain classified activities at the Lyner facility were incorporated in the overall evaluation of impacts assessed in the NTS EIS. The analyses of potential long-term impacts of classified activities to the
40 vadose zone are representative of the analysis presented in the EIS for other proposed defense testing activities at the site. In reference to potential human health and safety impacts associated with activities at the Lyner complex, the risk assessment for the Defense Assembly Facility (DAF) adequately bounds the potential above-ground risks and impacts.

HUMAN HEALTH

41 The approach to estimating human health consequences presented in the EIS
42 excludes the role of humans in the environment. The Final EIS must allow readers the

STATE GOVERNMENT 2 (CONTINUED)

42 cont. ability to comprehend how health effects findings and conclusions are reached in a credible scientific manner. In addition, there is no attention given in the EIS to the transport of contaminants within ecosystems and landscapes. This requires an ecosystem

43 approach to managing resources at the site and should be described in Volume 2 of the EIS as a benefit to be derived from ecosystem-based management activities. The relevance of this to the DOE's environmental restoration program should be emphasized.

TRANSPORTATION

44 The EIS failed to provide a sufficiently detailed description of the transportation activities associated with each proposed alternative. Such information is needed to allow State and local officials and other affected parties the ability to accurately assess the on-site and off-site transportation risks and impacts of each alternative. Detailed transportation information is especially important for assessing the risks and impacts of materials and waste shipments under Alternatives 1 and 3. Furthermore, for each alternative, the EIS did not fully describe expected shipments of the following categories

45 of hazardous materials to and from NTS: (1) special nuclear materials; (2) radioactive and mixed wastes; (3) conventional explosives and non-nuclear weapons and munitions; (4) petroleum products, including liquefied petroleum gases; and (5) all other hazardous materials regulated under the Hazardous Materials Transportation Uniform Safety Act.

46 The EIS also failed to provide a detailed inventory of expected shipments within each category. For example, under radioactive materials, specific information was not provided on expected shipments for the following materials listed in Chapter 3.0: nuclear weapons; plutonium pits; nuclear weapons components; weapons-usable fissile material; transuranic wastes; transuranic mixed wastes; other radioactive materials requiring shipment in Type B packages; low-level radioactive wastes; and low-level mixed wastes.

47 If DOE adopts a proposed action for the Final EIS that includes the transportation of any of these nuclear materials and radioactive wastes, then a cumulative impact

STATE GOVERNMENT 2 (CONTINUED)

47 cont. analysis for transportation must be prepared that covers the combined functions of DOE's Environmental Management and Defense Program activities at the NTS. At a minimum, this must include transportation information for each specific material. The information must include: (1) origin and destination; (2) quantity or volume shipped; (3) total radioactivity and maximum radioactivity per individual shipment; (4) shipping container characteristics and capacities; (5) shipment mode or modes; (6) transportation service options; (7) carrier qualifications and selection procedures; (8) shipment route or routes; (9) cumulative shipment miles; and (10) timing of shipments.

As presently written, the EIS provides useful information on only two of the twelve types of radioactive materials that could be shipped to NTS under Alternatives 1 and 3 (i.e., low-level radioactive waste(LLW) and low-level mixed waste). The EIS does

48 not even attempt, however, to provide comparable information on the other, more highly radioactive materials or on high-hazard non-radioactive materials that would be shipped to NTS under Alternatives 1 and 3. State officials note that such information has been disclosed and assessed by DOE in other comparable EIS documents.[1]

Because the EIS fails to provide basic information on most of the hazardous materials expected to be shipped to NTS, it is not possible to fully evaluate the transportation risk assessment provided in the Transportation Study. It is clear, however,

49 that the transportation risk calculations used in the Transportation Study [Appendix I], and summarized in the EIS, Table 3-5 [p.3-41], apply only to shipments of low-level radioactive and mixed wastes. As mentioned above, this analysis will need to be expanded, depending on the proposed action selected in the Final EIS.

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1 U.S. Department of Energy, February 1996. Comparative Study of Waste Isolation Pilot Plant (WIPP) Transportation Alternatives, DOE/WIPP 95-058

STATE GOVERNMENT 2 (CONTINUED)

50 With regard to the Transportation Study, the reported risks associated with off-site transportation accidents involving low-level radioactive and mixed waste cannot be verified based on the information provided. In particular, the Transportation Study fails to provide a detailed discussion of the consequences of a maximum credible severe accident or terrorist incident involving release of radioactive materials. Given the EIS's deficient transportation risk analysis, it is not surprising that it fails to adequately address the perceived risk impacts which may result from transportation activities under Alternatives 1 and 3. Large scale shipments of low-level radioactive and mixed wastes along Nevada highway routes, especially through the Las Vegas Valley, may potentially cause significant adverse socioeconomic and cultural impacts even if no accidents occur. The current level of shipments to NTS has already caused widespread public concern in Clark County. The potential socioeconomic and cultural impacts resulting from shipments 51 of more highly radioactive materials, particularly under Alternative 3, could be very significant. The EIS must address these impacts.

52 Finally, the EIS must clearly provide for a process by which routes are identified for shipping low-level waste, mixed LLW, Special Case Waste (SCW), and special nuclear materials to NTS. State officials contend that it is not acceptable to leave routing decisions solely to each carrier's discretion. DOE must commit to stipulating, by means of contract requirements with carriers, routes or segments of routes that cannot be used for waste and nuclear materials shipments to NTS.

53 The State of Nevada has analyzed this issue and has determined that the use of contract provisions that require adherence to routing preferences is not in violation of any federal or state law or regulation dealing with radioactive or hazardous materials route designations. DOE, as the shipper of these materials (or the facility operator acting on behalf of DOE), may incorporate provisions into contracts with carriers that require the carrier to perform in specified ways. As long as DOE is not attempting to bind contractors/carriers to provisions that are illegal or in violation of existing regulations,

STATE GOVERNMENT 2 (CONTINUED)

53 cont. there is nothing to prohibit DOE from using the contracting process to enforce the use of routes that are acceptable to DOE/NTS stakeholders (i.e., affected local governments and sovereign nations impacted by shipments to NTS).

54 The State has further determined that the process by which DOE is permitted to solicit and award contracts can readily accommodate the requirement that carriers use certain routes or avoid certain unacceptable segments of routes. Doing so may mean that DOE will need to forego the use of general freight for shipments of LLW and other materials to NTS for disposal, although it is not altogether clear that DOE cannot reach needed accommodations with carriers using general freight. If such accommodation is not possible, DOE should commit to the use of contract carriers (e.g., carriers that are willing to bid on and enter into contracts that contains stipulations with respect to shipment routing), even if that means incurring additional costs. State officials believe that DOE should commit to such a process in the Record of Decision for the EIS.

-- DETAILED COMMENTS --
ON
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NEVADA TEST SITE AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA

EIS SUMMARY DOCUMENT

COVER SHEET **Abstract**

55 ***COMMENT 001*** There are two significant issues that are not mentioned in the Abstract. One is the relationship of Volume 2, Framework for Resource Management Plan, to the EIS. The information needed for this is in Section 1.4, Relationship to the Nevada Test Site Environmental Impact Statement, in Volume 2. The other issue is the reason why the portion of the NTS dedicated to the Yucca Mountain Project and the project itself are excluded from the EIS.

PAGE S-1 **Introduction**

56 ***COMMENT 002*** Comment 001 also applies here.

PAGE S-3 **Purpose and Need**

57 ***COMMENT 003*** A section should be added that discusses the National Environmental Research Park (NERP) designation for the NTS and the programs and activities involved. There is no significant discussion of NERP

in the body of the EIS. Such a section should be added first in Chapter 2 and then followed through in Chapters 3, 4, and 5.

PAGE S-5 **Environmental Restoration Program**

"The goal of the Environmental Restoration Program is to ensure that risks to the environment and to human health and safety, as posed by inactive and surplus facilities and sites, are either eliminated or reduced to protective levels."

58 ***COMMENT 004*** The term "protective levels" should be specifically defined in the Final EIS.

PAGE S-15 **Transportation and Waste Management**
Lines 9-10

"Transuranic, mixed transuranic, mixed low-level waste, low-level, hazardous waste, and Toxic Substances Control Act wastes are stored at the NTS."

COMMENT 005 The Implementation Plan for the NTS EIS proposes storage of classified transuranic waste at the NTS; storage is proposed for both Alternatives 1 and 3, (See Appendix D, Page D-4). While we believe this waste is currently stored at the site, the Final EIS must acknowledge that DOE is storing classified transuranic waste at NTS, along with disclosing the volume of the waste and planned waste treatment and disposal alternatives.

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PAGE S-19 **Surface Hydrology and Groundwater**
Lines 10-11

"To date, no radioactive contamination has been detected in on-site water supply wells or in off-site monitoring wells."

STATE GOVERNMENT 2 (CONTINUED)

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COMMENT 006 Review of other DOE documents suggests this statement is either misleading or incorrect. The Nevada Test Site Annual Site Environmental Report 1994 noted that water drawn from the UE-5n well contained high concentrations of tritium. In addition, sampling wells at the project Faultless site have recently shown radioactive contamination. Also, tritium contaminated water is flowing from the tunnels at the NTS Area 12 complex.

PAGE S-28 **Line 31**

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COMMENT 007 This paragraph should include a discussion of Section 2.5, Evaluation of Environmental Impacts and Risk, from Volume 1, with emphasis on human health risk assessment, performance evaluation, and performance assessment. Cross reference should be made to Appendix H, Human Health Risk and Safety Impacts Study.

PAGE S-29 **Environmental Restoration Program**

Line 9 to 10 "Under Alternative 2, environmental restoration activities would cease. This would result in a condition of noncompliance with environmental requirements and limit the future use of the land."

COMMENT 008 Council of Environmental Quality Regulations 1500.2(e) state that Federal agencies shall to the fullest extent possible "use the NEPA process to identify and assess the **reasonable** [emphasis added] alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." In reference to Alternative 2 and its effect on DOE's Environmental Restoration Program, State officials believe this alternative is not

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STATE GOVERNMENT 2 (CONTINUED)

62 cont.

reasonable, moreover, if adopted, this alternative will violate NEPA implementing regulations. Accordingly, the structure of Alternative 2 must be reconfigured in the Final EIS to avoid "compliance" conflicts with NEPA.

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PAGE S-30 **Unavoidable Adverse Effects**

Line 4 "Other testing and experimental activity in support of stockpile stewardship programs would have smaller impacts [than impacts from conducting an underground nuclear test]."

COMMENT 009 State officials concur that unavoidable impacts to the environment would occur if the President directs DOE to conduct an underground nuclear test at the NTS. Most observers believe, however, that it is unlikely that nuclear testing will resume in the near or distant future. Nevertheless, other impacts from planned stockpile stewardship activities at the NTS will have significant impacts on the environment. The description of the classified subcritical test proposed at the LYNER complex will cause the dispersal of substantial quantities of plutonium-239, along with the abandonment of the plutonium contaminated underground "shot" rooms. The Final EIS should clarify that this is an unavoidable adverse impact and that DOE is not planning to remediate these "permanently" contaminated underground areas.

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DOE EIS
Nevada Test Site

May 3, 1996

State Clearinghouse
SAI # 9530011O

VOLUME I, CHAPTERS 1-9 (Part A)

1.0 INTRODUCTION

PAGE 1-2 **Introduction**

65 ***COMMENT 010*** Paragraphs should be added to the Introduction that discuss (i) the reasons for the exclusion of the Yucca Mountain Project from the EIS, (ii) the significance of Volume 2, Framework for Resource Management Plan, to the EIS, and (iii) that Appendix F is a NEPA compliance action. There is no mention anywhere in Volume I as to why the Framework for Resource Management Plan was undertaken, and, as in the abstract for the EIS, the Introduction must include such insight. The information needed for this is in Section 1.4, Relationship to the Nevada Test Site Environmental Impact Statement, in Volume 2.

PAGE 1-5 **Public Land Orders**
Section 1.3 Lines 27 through 30 indicate that the primary federal and State laws, regulations, Executive orders, and DOE orders that may apply to the proposed action and alternatives presented in the NTS EIS are appropriately summarized in Appendix C.

66 ***COMMENT 011*** A brief discussion of the public land orders for the NTS withdrawal should be noted on Page 1-5 followed by a detailed discussion in Appendix C. At present, Appendix C contains an inadequate discussion of the withdrawal orders.

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PAGE 1-6 **Clarification: Line 6.**

67 ***COMMENT 012*** The reference citation for Yucca Mountain (3.2.7.1) is incorrect.

PAGE 1-7 **Generic, Heavy Industrial Facility**
Line 14 "The NTS is no longer considered a potential host site for the tritium supply and recycling facilities, they have been replaced with a generic, heavy industrial facility with similar footprint and resources requirements. In this way, the impact analysis for the expanded use of NTS resources is preserved."

COMMENT 013 We concur that DOE has chosen not to site a major tritium production facility at the NTS. There are, however, other proposed actions at the NTS that could be construed as representing "a generic, heavy industrial facility." The most obvious example is a new fuel fabrication facility for the production of mixed oxide (MOX) fuel. The EIS fails, however, to identify this alternative activity.[4]

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PAGE 1-7 **Defense Assembly Facility (DAF)**
Line 33 "Under stockpile management activities, the NTS Device Assembly Facility is proposed as an alternative site for weapons assembly and disassembly." It should be mentioned that the Notice of Intent (NOI) for DOE's Stockpile Stewardship and Management Programmatic

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[4] U.S. Department of Energy, March 1995. Office of Fissile Materials Disposition. *Long-Term Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement*, Implementation Plan, pages 3-4 to 3-6.

69 cont.

Environmental Impact Statement (PEIS) also acknowledges that there is a potential overlap with the Storage and Disposal PEIS regarding storage of strategic reserves of plutonium. (The DAF is, in fact, identified for multiple missions in both PEIS documents). The subject NOI does, however, suggest that preparation of the two PEIS documents will be coordinated to prevent conflicting analyses and to ensure that DOE reaches an appropriate decision.

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COMMENT 014 State officials are concerned that, if the DAF is selected for the management and storage of strategic reserves of plutonium and the Storage and Disposition PEIS proposes an alternative for plutonium disposition that includes use of the DAF, then cumulative impacts may occur without adequate environmental analyses, as required under the NEPA.

PAGE 1-8
Line 11

Storage and Disposition of Weapons-Usable Fissile Material Programmatic EIS

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COMMENT 015 The discussion in the EIS is inadequate. The Implementation Plan for the Plutonium Storage and Disposition PEIS (Footnote 4) identifies the NTS as an alternative site for nuclear reactor development and MOX fuel fabrication. The text in the EIS should be altered accordingly.

PAGE 1-9
Line 9

Nellis Air Force Range Complex EIS

In reference to the Nellis Air Force Range complex (NAFR), the statement is made that "the land withdrawal alternatives evaluated in

the NAFR Complex Withdrawal EIS [as per PL 99-606] may result in proposed changes that could affect the DOE operations".

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COMMENT 016 This statement is vague, unclear, and should be clarified. For example, how will decisions concerning future uses of the NAFR impact DOE programs and will the use/control of Pahute Mesa change?[1] Will access and control of the Double Tracks site and/or other plutonium contaminated soil sites on the NAFR change?

2.0 PURPOSE AND NEED FOR DOE ACTION

PAGE 2-6
Line 8

NTS Waste Disposal Mission

"While the NTS no longer accepts transuranic or mixed waste from other sites, the management of low-level wastes generated at the NTS and other DOE-approved facilities across the United States has been an ongoing mission of the NTS."

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COMMENT 017 State officials do not concur with this statement for the following reasons:

Performance Assessment: While we are aware that DOE has developed a waste acceptance program at the NTS, the acceptance criteria are not based on a completed performance assessment that

[1] Under a Memorandum of Understanding between DOE and the Department of the Air Force (Tactical Air Command -- Nellis), use and operational control of the Pahute Mesa has been granted to DOE for "execution of the nation's underground nuclear weapons test mission". See MOU E-AIOB-82NV10283.

73 cont.

clearly delineates the type and character of the wastes that can be disposed of at either the Area 3 or the Area 5 radioactive waste management sites. Therefore, DOE is in violation of its own waste management order (5820.2A, Chapter III, a & b).

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Land-Use Constraints: There are existing legal constraints contained in the public land orders for the NTS land withdrawal that must be resolved before DOE can legally dispose of offsite-generated low-level waste at the site. Specifically, the NTS land withdrawal orders restrict the use of the site to atomic testing activities only. State officials have long contended that DOE must seek both congressional and State approval to use the site for disposal of radioactive waste shipped from offsite generators.

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We contend that to legally implement disposal decisions for low-level and low-level mixed waste (as well as high-level waste, spent nuclear fuel, and special nuclear materials such as plutonium), DOE must obtain exclusive jurisdiction over the lands comprising the disposal facilities on the NTS and/or adjacent public lands. The EIS, however, omits any discussion of how DOE intends to acquire exclusive jurisdiction over these lands, given that exclusive jurisdiction may only be acquired in the manner set forth in United States Constitution. Of particular interest to Nevada is the requirement that DOE obtain the consent of the Nevada Legislature in order to acquire exclusive jurisdiction. Moreover, if DOE intends to exercise less than exclusive jurisdiction, at some point the Department must present the rationale upon which it bases its assumption that it can accomplish isolation of the waste and

prevention of human intrusion in the absence of exclusive jurisdiction.

PAGE 2-9 **Waste Definitions** (Page Insert)

76 ***COMMENT 018*** DOE failed to include a specific definition for Special Case Waste (SCW) in the definitions. Although a definition of Greater-Than-Class-C (GTCC) waste is provided, the amount of this waste type compared to the amount of SCW is not that significant. For example, while DOE has publicly stated that as much as 70,000 cubic feet (2,000m^3) of GTCC waste will be produced through the year 2035[5], the estimates for Special Case Waste are much larger and may exceed 2.6 million cubic feet (75,000m^3). Because SCW has been disposed at NTS and, since this waste type is generally long-lived, contains high concentrations of radionuclides, and represents a significant threat to human health and the environment, the waste type should be specifically defined in the document.[7]

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PAGE 2-14 **Evaluation of Environmental Impacts and Risk**

78 ***COMMENT 019*** A subsection should be added that discusses the biological-ecological studies and information as well as the reclamation studies and information accrued by the Yucca Mountain Project. If this information, which is extensive and significant, has not been used for

[5] Lockheed Corporation, April 11, 1995 Stakeholder Workshop for GTCC LLW Management Program Strategy Development, (ACE-Federal Reporters, INC., page 19).

[7] See Federal Register Notice 3/13/95: Strategy for Management and Disposal of Greater-Than-Class-C Low-Level Radioactive Waste

the EIS, steps should be taken to incorporate it along with corresponding analyses in the Final EIS. (See Comment 136)

PAGE 2-15 **Figure 2-1**

79 ***COMMENT 020*** The figure should include the biological-ecological studies and information as well as the reclamation studies and information accrued by the Yucca Mountain Project.

PAGE 2-17
Section 2.5.5 **Performance Evaluation**

80 ***COMMENT 021*** The discussion on the performance evaluation process established for screening DOE sites for disposal of mixed low-level and defense low-level waste should be expanded. The discussion in the EIS missed the point that the process was implemented across the entire weapons complex and not just for the NTS. How this national performance evaluation process will be used to support forthcoming decisions for disposal of mixed low-level and low-level defense waste, via DOE's Final Waste Management PEIS, should also be discussed.

PAGE 2-20
Line 7 **Performance Assessment -- Groundwater Pathways**

"Therefore, the performance assessment for these waste management facilities will not focus on the groundwater pathway. If a groundwater pathway is demonstrated, the risk associated with the Waste Management Program (results of the performance assessment activities) would be integrated with the current underground test

area's remediation (part of the Environmental Restoration program)."

COMMENT 022 State officials do not concur with these statements and contend that, as part of the Performance Assessment process, DOE must include a detailed assessment of potential groundwater pathways for the Area 3 disposal site. The State expects DOE to commit to a performance assessment of the potential groundwater pathways for the Area 3 disposal site and provide a schedule for such an assessment in the EIS ROD.

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In addition, statements in the EIS suggests that "scientific hypotheses" indicate that the rubble chimney beneath the low-level waste unit at Area 3 will not enhance or promote vertical groundwater flow to the deep shot cavity.[8] Justification for this statement could not be found in the EIS. We also note the statement in Section 5.1.1.5.2. of the EIS which says "the Desert Research Institute has investigated the effects of craters on infiltration and soil moisture movement, and research is continuing in this area"... [and] the study was inconclusive [and] additional studies are planned during 1997." Clearly the EIS itself is contradictory about the need to develop additional information on groundwater pathway analyses for the disposal sites in Area 3.

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State officials suggest that DOE re-evaluate and state in the EIS the need for a specific groundwater pathway analysis for the Area 3

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[8] See EIS, Page 2-22, lines 26 - 30.

84 cont.

disposal site. Also, relying on the model that was developed for the Area 5 site as a substitute for developing a specific analysis for the Area 3 site is not acceptable (See Page 2-22, lines 28-30). While we concur that the natural hydrological and geological environments beneath the two NTS disposal sites may have been similar in the past, nuclear testing has induced ground motion and fracturing at Area 3 and has clearly changed the natural conditions at this site. A total of 251 underground nuclear tests were conducted at Area 3 as opposed to only five tests at Area 5."

PAGE 2-23
Line 32

Transuranic Waste in Trench T04C Performance Assessment

As disclosed in the EIS, in 1986, transuranic waste shipped from DOE's Rocky Flats plant in Colorado was buried at the Area 5 waste disposal site at the NTS. Yet the subsequent preliminary analysis of the site (as per CFR Part 191) suggests the waste site may not meet adequate disposal confinement requirements. The EIS states that "Preliminary performance assessment studies indicate that this source term [transuranic waste buried in Trench TO4C] is noncompliant with the containment and individual protection requirements [contained in 40 CFR 191]." To address this unfavorable situation, the EIS suggests that DOE officials will identify and assess appropriate corrective measures as a result of the preliminary performance assessment.

85 *COMMENT 023* State officials expect a discussion of one or more alternative actions to address compliance with the environmental radiation protections

See EIS, Pages 4-14 and 4-15

85 cont.

standards stipulated under CFR 191 for the referenced waste site. The discussion should be presented in the Final EIS. Moreover, a commitment to implement the identified remedies should be stipulated in the EIS Record of Decision.

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The State also knows that the greater confinement boreholes at the Area 5 disposal site were shut down because these boreholes did not meet the requirements of the Safe Drinking Water Act. This is one more instance where the State expects DOE to develop alternative actions and corrective action plans to bring this activity into compliance. It is not acceptable mitigation to simply cease an activity that is in violation of requirements. Measures must be taken to adequately mitigate the contamination. DOE should commit to this action in the EIS ROD.

3.0 DESCRIPTION OF ALTERNATIVES

PAGE 3-3
Line 19

Section 3.1.1.1: Stockpile Stewardship; First Scenario

Destroying damaged nuclear weapons.

87 *COMMENT 024* A review of the existing public land orders that established the NTS reveals that this activity is inconsistent with both the purpose and intent of the withdrawal orders. The NTS was established for nuclear testing activities and related research and development programs only, not for destroying damaged nuclear weapons. Discussion of this activity should be excluded from activities classified as continued and current operations.

PAGE 3-4

Section 3.1.1.2: Waste Management Program under Alternative 1

88 *COMMENT 025* Again, a review of the existing public land orders that established the NTS clearly show that the activities discussed here are inconsistent with both the purpose and intent of the withdrawal. The NTS was not established to serve as a waste disposal site for off-site generated defense wastes. In reference to the No Action Alternative, the description of the NTS waste management program described under Alternative 2, Section 3.1.2.2 aptly describes the type of on-site disposal program that would be consistent with existing site mission requirements stipulated under the public land orders.

PAGE 3-6
Line 7

Conventional Weapons Demilitarization

89 *COMMENT 026* The EIS should reference the congressional action and/or direct appropriation made in support of this mission activity. If no such authorization is available, the function should be considered only as part of the expanded use alternative.

PAGE 3-6

Land-Use -- Nuclear Test Zone
Figure 3-1 and Line 23

90 *COMMENT 027* Several areas in the northeastern corner of NTS are identified in Figure 3-1 (Pages 3-8 to 3-9) as Nuclear Test Zones (areas 1-4 and 7-10) and Nuclear or High Explosive Test Zones (areas 12 and 16). Legislation currently pending in Congress (H.R.1020 and S.1271)

90 cont. directs DOE to construct a road for truck transport of spent nuclear fuel and high-level radioactive waste through these areas (along the "Chalk Mountain Route") to an interim storage facility in Area 25. Since these bills have been reported out of the congressional committees of jurisdiction, and the bills identify a specific route through these areas, the proposed heavy haul truck operations cannot be dismissed as speculative activities. If any of these proposals are enacted by Congress, the EIS must be supplemented. The supplement would need to discuss the compatibility or incompatibility of heavy haul truck operations with DOE's use of lands for underground nuclear weapons tests and underground and surface high-explosive tests or experiments proposed under Alternative 1.

COMMENT 028 A significant portion of DOE'S proposed Nuclear Test Zone is located on the Pahute Mesa. While State officials are not necessarily opposed to this suggested land-use designation, the EIS should clarify that such a designation may not be within DOE's control. The Pahute Mesa constitutes public lands that have been temporarily withdrawn for military use -- and then subsequently "loaned" to DOE for nuclear testing activities (See footnote 5). As DOE is aware, any future use of the Pahute Mesa after 2001 is subject to Congressional approval per PL. 99-606. The Final EIS should clarify these facts.

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PAGE 3-14
Lines 14-28

Alternative 3, Expanded Use: Defense Programs

COMMENT 029

92 The four public land orders that established the NTS fail to support activities covering storage, assembly, disassembly, and modification of nuclear weapons. Likewise, interim storage of plutonium pits and weapons components and long-term storage and disposition of weapon-usable fissile materials are not consistent with these land withdrawal orders.

93 In fact, if DOE selects any of the these activities as part of the preferred alternative, then the EIS must evaluate these activities for possible conflicts with the objectives of federal, state, and local land use plans, policies, and controls (See CEQ 1502.16 (c)). Our review of the draft EIS suggests that such an evaluation is clearly missing for the land use requirements contained in the NTS public land orders. Sections 5.1.1.1 and 5.3.1.1.1 and Appendix C of the EIS contain no such evaluation.

94 In a related matter, State officials do understand that decisions regarding waste disposal, weapons management, and storage and disposition of weapons-usable fissile materials are being assessed in three different and separate DOE Programmatic Environmental Impacts Statements (PEIS). We are also aware the NTS is considered a viable alternative in each of these PEIS documents. However, since these documents do not propose to address site-specific CEQ compliance issues, such as conflicts with "objectives

94 (cont.) of federal plans, policies, and controls", then we must again insist that the NTS EIS contain such an evaluation.

95 At a minimum, if the proposed action defined in the Final EIS conflicts with existing permitted land uses at NTS, then DOE must commit in the EIS Record of Decision to address the resolution of such conflicts. A detailed strategy to resolve such conflicts should be specifically defined in the Mitigation Action Plan for the EIS.

PAGE 3-15

Section 3.1.3.2: Waste Management Program under Alternative 3

COMMENT 030

96 Included in the list of waste management activities on this page is a proposal to expand the disposal capability at NTS for wastes defined as "inappropriate for shallow land disposal." We must assume this refers to waste materials buried in the 13 greater confinement disposal boreholes and/or other deep trenches at the Area 5 disposal facility.[18] According to the EIS, these waste materials could be defined as Greater-Than-Class-C low-level waste, high-specific-activity low-level waste, transuranic waste, transuranic mixed waste, and classified wastes.[19] As mentioned previously, State officials believe these wastes are defined as Special Case Waste, and accordingly, must be subjected to a broad programmatic analysis under the regulations of the National Environmental Policy Act.

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[18] See EIS, Page A-29, lines 21-28

[19] See EIS, Page 4-45

In fact, State officials understand that alternatives for storage and disposal of DOE's SCW (along with GTCC waste) will be evaluated in a forthcoming Supplemental Environmental Impact Statement, "tiered" from DOE's Waste Management Programmatic EIS.[7] This EIS will likely consider a disposal strategy which proposes co-disposal of SCW with GTCC waste in a single NRC-licensed disposal facility. This is important, since the proposed repository at Yucca Mountain would be one of the candidate disposal sites. (Presumably, if the discussion in the NTS EIS is to be believed, a disposal site on the NTS will also be considered.) Yet the NTS EIS fails to discuss any of these issues. In fact, the entire discussion about waste defined as inappropriate for shallow land disposal is convoluted, misleading, and generally misrepresented in the EIS. Alternative 1, for example, proposes continued "Greater Confinement Waste Storage"[8] of this waste, while Alternative 3 proposes that "disposal capability for high-specific activity, low-level waste would be expanded."[9]

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DOE's NEPA compliance strategy for management and disposition of SCW and its relationship to the NTS EIS must be clarified. In addition, if either the Area 5 or Area 3 disposal sites are considered for confinement of SCW, as proposed under Alternative 3, the

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[7] Notice of Inquiry: Strategy for Management and Disposal of Greater-Than-Class-C Low-Level Radioactive Waste. Federal Register Notice, Vol. 60, No. 48, Monday, March 13, 1995.

[8] See EIS, Pages S-9 and 3-333

[9] See EIS, Page A- 40, line 26

98 (cont'd)

difficulties associated with meeting the waste acceptance criteria for dissimilar waste types must be addressed. As DOE is aware, in 1994, the Defense Nuclear Facilities Safety Board (the Board) evaluated DOE's low-level waste management program across DOE's weapons complex. That review resulted in Recommendation 94-2.[10] One of the findings in Recommendation 94-2 covered the content and implementation of DOE standards, orders, and regulations concerning the disposal of low-level defense waste.

Specifically, the Board found that in establishing low-level waste sites, DOE guidance for meeting established performance assessment criteria constrained "evaluators to apply reference dose criteria to disposal facilities individually rather than assessing composite effects when contiguous burial facilities exist." This means that DOE has established low-level disposal sites in such a way as to significantly complicate performance assessment approaches for determining radionuclide migration to the biosphere. Hence, if DOE proceeds with a co-disposal decision at one of the existing disposal sites on the NTS, the problems associated with addressing the "composite effects" will have to be acknowledged in the EIS and addressed in the Performance Assessments for the Area 3 and 5 disposal sites.

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[10] Defense Nuclear Facilities Safety Board, Recommendation 94-2, September 15, 1994 Federal Register Vol. 59, No. 178, page 47309

PAGE 3-16 **Section 3.1.3.5: Work for Other Programs under Alternative 3**

COMMENT 031

100 If a research and demonstration project for conventional weapons demilitarization is successfully implemented at the NTS and a full scale demilitarization program is subsequently proposed, then DOE must assess land-use conflicts with the mission requirements set

101 forth in the existing land withdrawal orders for the site. In addition, if the proposed activity results in a commitment in perpetuity of land and resources at the site, then the expressed purpose of the State's cession of jurisdiction of the NTS would also require review.

PAGE 3-22;23 **Potential Use of Relinquished NTS Lands under Alternative 4**
Public Recreation

COMMENT 032

The Timber Mountain Caldera is a national natural landmark which has been designated as an Area of Critical Environmental Concern. Under Alternative 4 (Figure 3-4), the EIS suggests that portions of NTS, including the Timber Mountain Caldera, could be considered as a potential turn back area (i.e., released to the Bureau of Land Management for public use). State officials concur with this approach and propose that DOE pursue "turn back" of the area as part of the EIS RMP process discussed in Volume 2 of the EIS. One of the RMP goals for guiding the conservation and use of resources at NTS could be the pursuit of this turn back option.

102 Also, the discussion of the Timber Mountain Caldera National Natural Landmark should explain what the designation involves and the role of the National Park Service. Any biological or other

environmental studies of the area should be cited and summarized, and any DOE activities that have occurred there should be described.

102 (cont.) Figure 3-4, page 3-24, should include the official boundaries of the Timber Mountain Caldera National Natural Landmark, as given in Map 6, page 11, of the Bureau of Land Management Approved Nellis Air Force Range Resource Plan and Record of Decision, February 1992.

PAGE 3-26 **Alternatives Eliminated from Further Consideration**
Line 17 Receipt of waste from out-of-state waste generators.

COMMENT 033

In the State of Nevada's scoping comments for this EIS[16], it was stated "that the only action appropriately described as no action at the NTS includes only national defense and nuclear weapons testing activities defined under the public land orders as consented to by the State of Nevada for the NTS withdrawal."[17] We further stated that the activities described by DOE in its Notice of Intent as "No Action" were in fact "Expanded Use". The State's position on this

103 issue has not changed. Hence, receipt of waste from out-of-state

[16] Nevada Department of Administration, November 10, 1994, Letter to Donald R. Ellis, State Clearinghouse Scoping Comments, Notice of Intent (NOI) for a Site-Wide Environmental Impact Statement for the Nevada Test Site and Other Off-site Test Locations

[17] Public Land Order 805, February 12, 1952; Public Land Order 2568, December 19, 1961; Public Land Order 3759, August 3, 1965, as consented to by the Nevada State Legislature, NRS 328.135, .160, .170. (See First Amended Complaint, State of Nevada vs. O'Leary, U.S. District Court [Nevada], Case No. CV-S-94-80576-PMP (RLH), ¶ 3.2.)

103 cont

waste generators can only be assessed in the EIS as "Expanded Use", not as part of the site's continued current operations.

PAGE 3-28
Lines 9-13

Alternatives Including Rail Routes for Waste Transport

"...no decision on rail access to the NTS will be made in this [NTS] EIS or in the Record of Decision. The DOE/NV recognizes, however, that a rail option would be a feasible alternative should the NTS be named the sole low-level waste disposal site for the DOE complex and defers any decision to such time that a decision in made in the Waste Management Programmatic Environmental Impact Statement."

COMMENT 034

In concept, State officials concur with this decision strategy for assessing rail access to the NTS. CEQ regulations (1508.28) encourage major federal actions to be covered in broader environmental impacts statements and thereafter be assessed in detail in subsequent site-specific EIS documents. Notwithstanding this approach, there are two separate converging decisions concerning rail transport of nuclear waste to the NTS which are actively being contemplated: (1) The Office of Civilian Radioactive Waste Management (DOE/OCRWM) has initiated scoping for the Yucca Mountain Repository EIS, and the document will assess rail access of spent nuclear fuel and high-level waste; (2) As stated in the NTS EIS, "Should the DOE decide to construct and operate a rail spur [to Yucca Mountain], the DOE/NV would perform additional evaluations associated with the use of this resource by low-level waste generators."

To adequately comply with the CEQ implementing regulations for NEPA, State officials contend that these additional evaluations would require preparation of a Supplemental EIS to the NTS Site-Wide EIS.[18] We note the analysis of rail impacts such as effects to human health and the environment will be performed by DOE/OCRWM at both the programmatic and site-specific level (i.e., programmatic for rail transport outside of Nevada and site-specific for rail transport inside Nevada). Such an analysis will not, however, include a cumulative impact analysis of transporting repository-destined waste as well as low-level waste to the NTS. This paragraph should state where the cumulative impacts from the Yucca Mountain Project will be addressed and why such impacts are not addressed in this EIS.

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PAGE 3-29

Yucca Mountain Repository Construction, Operation, and Closure

COMMENT 035

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Section 3.2.6.1 about the Yucca Mountain Project should site and discuss the Memorandum of Agreement (MOA) between DOE Nevada Operations Office and the Yucca Mountain Project (UN-207) executed on September 1, 1994. The MOA should be included among the citations in Appendix C, Relevant Regulatory Requirements.

[18] CEQ 1508.7 (Cumulative impacts). CEQ 1502.9 (1)(i) Draft, final, and supplemental statements.

Lines 20-24 "In accordance with the Nuclear Waste Policy Act, the DOE prepared an environmental assessment in 1986 to determine the suitability of the Yucca Mountain site characterization. The current characterization activities occurring at Yucca Mountain are evaluated in existing National Environmental Policy Act documents and are included in the discussion of cumulative impacts within this NTS EIS.

COMMENT 036 These statements are inaccurate, misleading, and must be corrected. First of all, the 1986 statutory Environmental Assessment (EA) was not prepared "to determine the suitability of the Yucca Mountain site characterization." In fact, the EA served only as a site screening document. Section 112.(D) of the Nuclear Waste Policy Act (NWPA), as Amended, specifies the purpose and intent of the document. It requires the Secretary of Energy to "evaluate whether such site [Yucca Mountain] is suitable for site characterization . . ." In other words, the EA was mandated by the NWPA to determine if the site was suitable to initiate a detailed site characterization program. The Act required a separate and subsequent evaluation as "to whether such site [Yucca Mountain] is suitable for development as a repository."

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Second, DOE has never prepared any NEPA documentation to assess the impact of any "current characterization activities" at Yucca Mountain. The 1986 statutory Environmental Assessment was not prepared in accordance with CEQ's NEPA regulations under 40 CFR Parts 1500-1508.

107

Lines 27-33 **Monitored Retrievable Storage (MRS) at NTS**

COMMENT 037 As stated earlier, if congressional legislation directs DOE to site an MRS facility at the NTS, then the NTS EIS will need to be supplemented. If this occurs, the supplemental EIS must fully evaluate the potential risks and impacts of spent nuclear fuel and high-level nuclear waste transportation to the interim storage facility at NTS Area 25, along with NTS transportation activities of radioactive waste and special nuclear materials. In particular, such an assessment must address the compatibility of NTS on-site and off-site routine operations using existing and new transportation infrastructures, the potential impacts of very severe accidents and terrorist attacks involving interim storage facility shipments to NTS, and related implications for NTS transportation activities such as public perception impacts and interim storage facility transportation risks.

PAGE 3-36
Lines 11-14 **Defense Program** (continued from Page 3-31)
"From data on the number and dates of the underground tests at the NTS, a total quantity of radioactivity remaining underground is estimated to be 300 million Ci [Curies]. Much of this radioactivity remains captured in the original cavity, and thus is not available to leach into the groundwater."

COMMENT 038 This statement is misleading and, according to other statements in this EIS, inaccurate. The pronouncement that much of the radioactivity "is not available to leach into the groundwater" at the NTS is not supported by the analysis presented in the EIS.

108

STATE GOVERNMENT 2 (CONTINUED)

A definitive discussion concerning the uncertainties about the radiological source term in the groundwater at NTS is provided on Page 4-159. In that discussion, it is noted that nearly 40 percent of the source term at the site is bound up in the groundwater (i.e., 112 million curies). In addition, while statements in the EIS suggest that "there is considerable uncertainty concerning the actual quantity of this radioactivity that can enter the groundwater regime" (Page 4-159, line 19), other statements conclude that "the release of radionuclides through the leaching pathway [leaching of radionuclides from the melt glass and cavity rubble within each shot cavity] continues to be an area of active research and with time, a better understanding of the true hydrologic source term could be had" (Page 4-161, line 37). Finally, the document states that "future studies covered by this EIS will help to reduce the current levels of uncertainty concerning both the mechanisms and consequences of radionuclide transport via groundwater flow at the NTS."

109 The Final EIS should, therefore, explain the uncertainties regarding the current knowledge of radiological source term contamination currently in the groundwater and the uncertainties associated with further contamination of the groundwater by leaching down through the shot cavities.

PAGE 3-37
Lines 14-15

Waste Management

"The majority of postulated injuries and fatalities would be a result of normal traffic accidents and not a result of exposure to the transported waste. Accidents that involve release of radioactive waste were factored into the risk evaluation."

STATE GOVERNMENT 2 (CONTINUED)

110 ***COMMENT 039*** This statement cannot be verified based on the information presented in the EIS and the supporting Transportation Study (Appendix I).

111 The EIS fails to provide a detailed discussion of a maximum credible severe accident or terrorist attack. To the extent that the statement can be supported by information presented in the EIS, the conclusion would apply only to shipments of low- level radioactive and mixed wastes.

Lines 16-18 "The DOE is committed to working with stakeholders and the American Indian sovereign nations on transportation issues during the National Environmental Policy Act process and into the future as issues arise."

112 ***COMMENT 040*** DOE must address specific routing issues for low-level waste shipments to the NTS. Specifically, and in consultation with sovereign nations and affected units of local government, DOE must develop a preferred low-level waste route alternative(s) for inclusion in the Final EIS. In addition, the agency must stipulate specific routes in the EIS Record of Decision, as well as institute a process of contractually requiring shippers to adhere to the selected routes.

Lines 26-28 "Even if low-level waste disposal was to result in the downward movement of contaminants to the deep subsurface, the incremental contribution of contamination [from waste disposed in craters in Area 3] to the radiologic source contained at and near the point of detonation would be negligible."

113 ***COMMENT 041*** This statement is contrary to DOE policy which specifically promotes management of radioactive waste to protect and preserve the environment.* Furthermore, there is no data or performance assessment presented that substantiates this conclusion.

PAGE 3-41 **Summary Comparison of Environmental Impacts**
Table 3-55

114 115 ***COMMENT 042*** The statements made in this table cannot be verified based on the information presented in the EIS and the supporting Transportation Study (Appendix I). The EIS fails to provide a detailed discussion of a maximum credible severe accident or terrorist attack. To the extent that the statements are supported by information presented in the EIS, the conclusions would apply only to shipments of low-level radioactive and mixed wastes.

4.0 AFFECTED ENVIRONMENTS

PAGE 4-3 **Nevada Test Site and Surrounding Areas**
Lines 3-6 "The NTS is in a remote and arid region, **surrounded** [emphasis added] by federal lands, with strictly controlled access . . . [and] the surrounding federal lands are not available for public use . . ."

* "DOE low-level waste operations shall be managed to protect the health and safety of the public, **preserve the environment** [emphasis added] of the waste management facilities, and ensure that no legacy requiring remedial action remains after operations have been terminated." (See DOE order 5820.2A (Chapter III 2. a. Policy), Management of Low-level Waste.)

116 ***COMMENT 043*** This statement is misleading and incorrect. Most of the NTS is surrounded by "federal lands" that have been temporarily withdrawn for military use or for conservation, such as the Nellis Air Force Range and the Desert National Wildlife Refuge. However, a portion of the lands on the southern and southwestern borders of NTS is directly contiguous to public lands. Those public lands are managed for multiple use by the Bureau of Land Management. The text in the EIS should be corrected accordingly.

PAGE 4-8 **Summary of Remaining Radioactivity on the NTS**
Table 4-1

117 ***COMMENT 044*** In addition to the grouped data presented in Table 4-1 on remaining radioactivity at the NTS, the EIS should also provide an isotope inventory of radionuclides remaining in the vadose zone for various geographic areas such as Frenchman's and Yucca Flats. While Table 4-27 on Page 4-160 does provide limited information for areas considered under or within 330 ft. of the water table, the EIS fails to provide this type of data for the vadose zone.

PAGE 4-9 **Public Land Orders and Withdrawals**
Lines 18-21 "Pahute Mesa, located in the northern portions of Areas 19 and 20, which encompasses approximately 106,240 acres, is managed by the DOE as a part of the NTS in accordance with a 1963 Memorandum of Understanding with the U.S. Air Force."

118 ***COMMENT 045*** As mentioned previously (Comment 16), continued use of Pahute Mesa is uncertain and subject to Air Force compliance with PL 99-

STATE GOVERNMENT 2 (CONTINUED)

118 cont.

606. DOE officials should be aware that long term institutional management of Pahute Mesa should not be subject to temporary military withdrawals, where land is not being used or contemplated for use by the Air Force for ground defense activities. This EIS is for a 10 year period; the Air Force jurisdiction, and thus the MOU, will expire within this time period. Therefore, the EIS must describe the intended action.

Lines 23-28

119 ***COMMENT 046*** The discussion about the Bureau of Land Management's review process for the NTS public land orders is incomplete. The text in the EIS must be expanded to include the current status of the review process. See related Comments 11, 159, and 160.

PAGE 4-15 **Area 4**
Line 7

120 ***COMMENT 047*** The Big Explosives Experimental Facility is first mentioned here. There is no cross reference to Appendix F, which is a Project-Specific Environmental Analysis for the facility. The facility should be included in Chapter 2, Purpose and Need for DOE Action, and the purpose for Appendix F should be explained there. (See Comment 162)

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-25 **NTS and Surrounding Land Use**
Figure 4-4

121 ***COMMENT 048*** The referenced figure is incorrect. There is no Yucca Mountain Land Withdrawal.

PAGE 4-26 **Site Support Activities**
Line 3

122 ***COMMENT 049*** Reference to Section A.7 is incorrect; the reference should be A.6.

PAGE 4-29 **Active Water Supply Wells on the NTS**
Table 4-3 Army Well 1

123 ***COMMENT 050*** The information listed for Army Well 1 appears to be incorrect. The detailed discussion on the water supply presented in Appendix A (A.6.1.1.3) indicates that Army Well 1 provides water for the southern half of NTS only. (See Page A-86, lines 23-29.)

124 In a related matter, the overall discussion of the NTS water supply system presented in Section 4.1.1.3 of the EIS, as well as in Appendix A, clearly indicates that significant improvement to the existing water supply and distribution system would be needed to accommodate expanded use activities proposed in Alternative 3 of the EIS. Accordingly, a general statement as to the overall condition of the water supply and distribution system should be presented in the EIS under Section 4.1.1.3. Also, the impacts of any

STATE GOVERNMENT 2 (CONTINUED)

124 cont. intended upgrades to the water supply system should be described as part of the analysis of the Expanded Use Alternative.

PAGE 4-32 **Electrical System**
Lines 17-34 General discussion

COMMENT 051 The discussion of the NTS electrical system fails to note that, because of load reductions over the past 2 years, all planned improvements to the subtransmission lines at the site have been canceled. (See Appendix A, Page A-79, lines 23-27). Additionally, the discussion fails to mention that the 138-kV tie line between Frenchman and the Jackass Flats substation is permanently out of service, and that the power lines, insulators, and poles connecting the Area 12 camp and Pahute Mesa are in poor condition and difficult to repair, resulting in prolonged losses of power to the Mesa area. While these important facts are mentioned in the details provided in Appendix A, they should be highlighted in Section 4.1.1.3 of the EIS. 125

PAGE 4-37 **Airspace**
Lines 6-7 Restricted Areas 4808 and 4809

COMMENT 052 The discussion about the need for and use of Restricted Area R4808 is missing from Section 4.1.1.4 of the document. Airspace area R4808 overlies the NTS and is managed by DOE. According to the EIS, civilian aircraft are never allowed to fly in this restricted airspace. Since nuclear testing has been halted, however, the need for maintaining this restricted airspace must be explained in the EIS. 126

STATE GOVERNMENT 2 (CONTINUED)

In the State's scoping comments, it was stated that DOE should "evaluate the potential for allowing the restricted airspace over the NTS [R4808] to be used by the Air Force at Nellis and/or other Department of Defense agencies." We argued that by allowing defense agencies to use this airspace, it would permit other special-use airspace to be returned to public domain status and/or avert additional planned military airspace withdrawals in Nevada. It was stated that "this is a significant issue in Nevada since more than 40 percent of the State's airspace (i.e., below 18,000 feet mean sea level) is designed for military use."

Under Alternative 4, Alternate Use of Withdrawal Lands, the EIS does point out that "the restricted airspace that overlies the NTS would be relinquished and would be available for commercial and general aviation use." Yet this action is predicated on the discontinuation of all defense-related activities at the NTS, something we generally consider a spurious alternative.

Hence, justification to retain exclusive control of the airspace over the NTS must be addressed in the EIS, given the continuing ban on nuclear testing along with presidential directives to maintain a zero yield underground testing program. 127

PAGE 4-44 **Disposal Operations**
Lines 9-24 Area 3 Disposal Site.

COMMENT 053 The text in this section fails to describe the nuclear test events that created the subsidence craters now used and/or contemplated for use 128

STATE GOVERNMENT 2 (CONTINUED)

as low-level disposal units at the Area 3 disposal site. (i.e., U3ax/bl, U3bg, U3ah/at, U3az, and U3bh). Discussion of this information is relevant, since the rubble chimneys beneath the craters are considered potential pathways for radionuclide migration. The only reference to the depths of the shot cavities beneath these subsidence craters is a single notation concerning the U3bh exploratory borehole. This borehole is being developed to characterize the physical and hydrologic properties of the chimney and to assess the potential for downward groundwater movement and radionuclide transport (See Page A-31, lines 8-14).

128 cont.

In addition, the discussion covering Geology and Soils in the EIS (Section 4.1.4) fails to disclose this information, even though the text states that "discussion of specific administrative units [such as the Area 3 disposal site] are also included in separate subsections when information at a local scale increases understanding and assists in the evaluation of impacts." No discussion of the conditions of the existing geology and soils for the Area 3 site are provided in separate subsections.

129

PAGE 4-45
Lines 18-24

Selecting Subsidence Craters for the Disposal of Waste

COMMENT 054

130 The reference in this section (Hawkins, 1995) is not listed in the reference section on Page 4-318 of the EIS. Moreover, since State officials are concerned about the process the DOE used in selecting subsidence craters for waste disposal, we are requesting a copy of the referenced document by Hawkins.

131

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-46
Lines 21-26

Mixed Waste

COMMENT 055

The text in this section of the EIS suggests that the State of Nevada will defer action on a Resource Conservation and Recovery Act Part B permit application for new mixed waste disposal units at the Area 5 disposal site "until the completion of negotiations between all States and the DOE under the Federal Facility Compliance Act" are complete. While this statement may be true, completion of a Part B permit for mixed waste disposal at the NTS will not be considered in advance of a national disposal siting decision for mixed waste as per DOE's Waste Management PEIS. In other words, before Nevada officials consider the Part B permit for new mixed waste disposal units at the NTS, DOE must issue a Record of Decision which proposes the NTS as a disposal site for theses wastes and completes the requirements in NAC 444-8458, Certificate of Designation Process. Moreover, it is the State's position that a completed performance assessment for the Area 5 disposal site must be in place before any action is taken on the Part B permit. These conditions should be stipulated in the text of the Final EIS.

132

PAGE 4-47
Lines 4-24

Nonhazardous Solid Waste

Area 9 Landfill

COMMENT 056

The text in this section states that "changes in State regulatory requirements will cause the Area 9 landfill to undergo partial closure and reopen as a Class III construction and demolition landfill." The discussion also acknowledges that modification to the landfill and

133 the associated potential impacts to the environment are covered in a recently published Environmental Assessment (the EA for Solid Waste Disposal - DOE, 1995a). The text in this section fails, however, to provide a description of why the referenced EA was prepared. It also fails to provide a discussion about both existing and potential environmental impacts at the Area 9 landfill site. Hence, the "Affected Environment" is not adequately described.

134 Accordingly, the Final EIS should reflect that new solid waste regulations now require that NTS municipal landfills be permitted in order to meet groundwater monitoring, design, operation, and closure requirements. The Final EIS should also document that the Area 9 landfill is located in a subsidence crater formed as a result of a subsurface nuclear detonation, the Turf event detonated in the 1960s. According to DOE, the Turf shot created the U10c

135 subsidence crater, and the detonation was conducted only 150 feet above the water table in NTS Area 9.[20] The Final EIS should reflect that continued use of the site as a Class III landfill will require partial closure, which among other things will include installation of a well monitoring system to assess the movement of moisture beneath the containment layer of the new disposal cell.

PAGE 4-48
Line 36

Waste Storage Operations

"Mixed Waste -- Currently, no mixed waste treatment operations occur at the NTS."

[20] U.S. Department of Energy, 1995. Final Environmental Assessment for Solid Waste Disposal, Nevada Test Site, Nye County, Nevada (DOE/EA-1097).

COMMENT 057

136 While this statement is true, it is not representative of the current status and thus must be corrected in the Final EIS. Since the draft NTS EIS was published, DOE/NV issued a Site Treatment Plan (STP)[21] for the management of mixed waste. The STP identifies specific treatment facilities for treating existing and on-site generated mixed waste, and it contains enforceable schedules and milestones for waste management and treatment activities, as required under the Federal Facility Compliance Act (FFCAct). Section 1.5.2 of the referenced STP states that "NTS mixed waste treatment planning will be an integral part of the NTS EIS process." Significant actions involving the treatment of mixed waste proposed in the NTS EIS are specifically limited, however, to Alternative 3, Expanded Use.[22] Federal law (FFCAct) required DOE/NV to prepare the STP along with a requirement for State approval of the STP. Given that DOE has now signed a Consent Order implementing the STP, federal actions required by this Order and the STP must now be considered as part of Alternative 1 - Continue Current Operations, the so-called No Action Alternative. Sections A.2.3.2, Page A-42, lines 1-32 and any other relevant sections (i.e., Sec. 4.1.2.3, line 12) of the EIS should be changed accordingly.

[21] U.S. Department of Energy, 1996. Nevada Test Site Treatment Plan, Nevada Operations Office, Waste Management Division (DOE/NV-397 (Rev. 2)

[22] See EIS, Section 3.1.3.2

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-61
Line 20

Low-Level Waste

"The **average annual** [emphasis added] low-level waste transported to the Area 5 Radioactive Waste Management Site during 1961 to 1991 was 14 million ft^3."

137 ***COMMENT 058***

This statement means that 14 million ft^3 of waste was received each year for the years indicated. Since this is incorrect, the text should be revised.

PAGE 4-68
Line 23

Socioeconomic — Region of Influence

The draft EIS defines the region of influence as "the area in which the principal direct and secondary socioeconomic effects of the project are likely to occur and are expected to be of the most consequence for local jurisdictions." The draft goes on to identify Clark and Nye counties and their various subdivisions as the region of influence.

138 ***COMMENT 059***

The region of influence for socioeconomic analysis in the EIS must include the State of Nevada as a whole. Socioeconomic impacts of NTS activities will have localized impacts that will be manifest within counties and sub-county jurisdictions. However, NTS activities will also have impacts that will be felt at the State level, with possible implications for State revenues and services. These potential impacts must be examined in the EIS.

In addition, the principal area for socioeconomic risk to the State from various NTS activities derives from potential impacts to the tourism/gaming industry. While such risk may be greatest for Clark

STATE GOVERNMENT 2 (CONTINUED)

County and the Las Vegas economy, it has very significant implications for the State as a whole because of Nevada's revenue and tax structure and the predominance of tourism/gaming in the overall economic functioning of the State. The EIS, therefore, must assess the potential for NTS activities (such as the transportation of 139 nuclear and hazardous materials) to negatively affect tourism and then examine how such negative impacts would be manifested throughout the State's economic system.

Selected studies dealing with potential tourism and related risk impacts associated with the high-level radioactive waste program at Yucca Mountain can be found in the following publications. These publications are not intended to represent a complete listing of all relevant literature, but to provide examples of the voluminous amounts of information that are available and should be used in the NTS EIS. The Yucca Mountain project is a valid analog case for various proposed NTS activities that involve the handling, transport, storage, or disposal of nuclear materials.

NWPO-SE-022-89: "Yucca Mountain Socioeconomic Project: An Interim Report on the State of Nevada Socioeconomic Studies" (June, 1989)

NWPO-SE-056-93: "State of Nevada Socioeconomic Studies of Yucca Mountain 1986 - 1992: An Annotated Guide and Research Summary" (June, 1993)

STATE GOVERNMENT 2 (CONTINUED)

"The Vulnerability of the Nevada Visitor Economy to a Repository at Yucca Mountain" by Doug Easterling in State of Nevada Socioeconomic Studies Biannual Report, 1993 - 1995. NWPO-SE-063-95 (July, 1995)

"Monitoring Stigma" by James Flynn, et al. in State of Nevada Socioeconomic Studies Biannual Report, 1993 - 1995. NWPO-SE-063-95 (July, 1995)

"The Social Amplification of Risk: A Conceptual Framework" by R.E. Kasperson, O. Renn, P. Slovic, H.S. Brown, J. Emel, R Goble, J.X. Kasperson, & S. Ratick in Risk Analysis, 8,177-187.

PAGE 4-69 **Economic Activity**

COMMENT 060 140

This section attempts to describe the economic and demographic context for each of the jurisdictions identified as regions of influence. It is apparently intended to serve as a quasi-baseline against which to examine possible project-induced economic effects. However, nowhere is the State's largest economic sector, the tourism/gaming sector, baselined. Indices such as the number of tourists that visit Las Vegas and Clark County, where they come from, the amount of money they bring into the State and local economies, their demographic characteristics, their propensities to be deterred from visiting Nevada as a result of various NTS activities or accidents related to such activities, and other important information are ignored completely. Likewise, the characteristics of the

STATE GOVERNMENT 2 (CONTINUED)

phenomenal, sustained growth that has occurred in Nevada's tourism/gaming over the past two decades is not examined anywhere in this so-called socioeconomic analysis. Without such baseline information, it is impossible to project what impacts are likely to occur as a result of the various EIS alternatives. 140 cont.

PAGE 4-89 **Public Services**

Line 9 This section describes public education, police protection, and health care in the counties and cities within the region of influence.

COMMENT 061 141

A glaring omission in the discussion of baseline conditions is the lack of attention to the status of emergency preparedness/emergency management in the affected counties and cities as well as at the State level. Since the EIS covers proposed activities that involve the handling, storage, and transport of nuclear, hazardous, and toxic materials in extraordinarily large volumes over an extended period of time, the EIS must contain a thorough assessment of the capabilities of Nevada's state and local governments to respond to potential accidents and emergencies involving radioactive and toxic materials, including incidents where such materials are released to the environment and come in contact with people and ecosystems. To do this, it is imperative that a baseline be established in the EIS that adequately reflects the response capabilities within the State and affected jurisdictions. This must be part of the socioeconomic baseline for the EIS so that the costs of any needed enhancements to these capabilities can be later assessed.

The establishment of accurate baseline information on emergency preparedness capabilities is also important for assessing the likely impacts of potentially stigmatizing events and accidents. The ability to respond quickly and effectively to high profile incidents where fear and strong negative public perceptions are involved could have an attenuating influence on the severity of impacts. Conversely, the lack of adequate response capabilities and health care facilities can seriously exacerbate and amplify any impacts.

PAGE 4-97
Lines 6 -7

Geology and Soils

"Discussions of specific administrative units are also included in separate subsections when information at a local scale increases understanding and assists in the evaluation."

142 ***COMMENT 062*** Specific discussion of the Area 5 and Area 3 disposal sites, the Area 9 landfill site, the Defense Nuclear Agency (DNA) tunnel complex, the specific sites which have been set aside for future nuclear tests (i.e., the defense readiness program), and the sites identified for solar development should be discussed as "separate subsections". All of these sites are proposed for expanded use activities that will impact geology and soils.

PAGE 4-106
Line 26

Subsurface Radiologic Sources

"The major impacts of an underground nuclear test on the physical environment are ground motion, disruption of the geologic media, surface subsidence, and contamination of the subsurface geologic media and surface soils."

143 ***COMMENT 063*** Assuming that the physical environment includes groundwater, then groundwater must be listed as a resource [in the referenced text] that would be impacted by an underground nuclear test. The EIS estimates that nearly 40 percent of the radiological source term at the NTS (112 million curies) is bound up in the groundwater. The EIS fails, however, to provide a radiologic source term estimate for radionuclides contained in the subsurface vadose zone.

PAGE 4-110
Lines 8 -9

Subsurface Radiologic Sources

"Site selection factors that are essential to ensuring both containment and the integrity of test data have also ensured that failures within the test areas have not and would not occur."

144 ***COMMENT 064*** While this statement may be true for recent and proposed underground nuclear tests, it is not true underground tests conducted in the past that have failed, resulting in significant venting of radionuclides to the ground surface and to the atmosphere. The EIS does acknowledge that past testing activities have failed to fully contain the release of radionuclides (See Page 4-187, line 28); but this should be further described in the document.

PAGE 4-113
Lines 34-35

Seismicity

COMMENT 065 The text indicates that current design practices require facilities to be built to seismic Zone 4 Uniform Building Code standards. Lines 5-10 on the same page discuss damage to the Yucca Mountain Field Operation Center, located in Area 25, from the 1992 Little Skull

Mountain earthquake and state that the facility was built prior to the more stringent building codes presently followed on the NTS. Given that the NTS is located in a region with moderate to major earthquake damage potential, a table listing all engineered structures and whether these structures were built to current seismic Zone 4 standards or previous, less stringent standards would be appropriate. Such a table would provide a measure of the vulnerability of DOE facilities to damage from future moderate to large earthquakes. 145

PAGE 4-115
Lines 23-24

Volcanism

COMMENT 066 The text states: "Based on analysis of previous basaltic volcanism in the NTS region, there is no evidence of either an increase in the volcanic rate or the development of a large-volume volcanic field (Crowe et al., 1986)." The volcanism section makes no definitive statement as to whether a volcanic hazard exists at NTS, NAFR complex, or TTR.

The volcanism discussion is deficient because it fails to discuss or cite other literature that presents information that argues for future volcanic activity in the region. The following citations are some examples: 146

Bradshaw, T.K., and Smith, E.I., 1994, Polygenetic Quaternary volcanism in Crater Flat, Nevada: Journal of Volcanology and Geothermal Research, v. 63, p. 165-182.

Connor, C.B., and Hill, B.E., 1994, Estimating the probability of volcanic disruption of the candidate Yucca Mountain Repository using spatially and temporally nonhomogeneous Poisson models: American Nuclear Society Focus '93.

Faulds, J.E., Feuerbach, D.L., and Smith, E.I., 1991, New insights on structural controls and emplacement mechanisms of Pliocene/Quaternary basaltic dikes, southern Nevada and northwestern Arizona [abs.]: Geological Society of America Abstracts with Programs, 1991 Annual Meeting, October 1991, San Diego, California, v. 23, no. 5, A118.

Faults, J.E., Bell, J.W., Feuerbach, D.L., and Ramelli, A.R., 1994, Geologic map of the Crater Flats area, Nevada, (with 3 cross-sections): Nevada Bureau of Mines and Geology Map 101.

Feuerbach, D.L., and Smith, E.I., 1990, Structural control of Pleistocene volcanism in Crater Flat, Nevada [abs.]: Geological Society of America Abstracts with Programs, 86th Annual Meeting/Cordilleran Section, March 1990, Tucson, Arizona, v. 22, no. 3, p. 23.

Ho, C.H., Smith, E.I., Feuerbach, D.L., and Naumann, T.R., 1991, Eruptive probability calculation for the Yucca Mountain site, USA: Statistical estimation of recurrence rates: Bulletin of Volcanology, v. 54, pp. 50-56.

Ho, C.H., 1992, Risk assessment for the Yucca Mountain high-level nuclear waste repository site: Estimation of volcanic disruption: Mathematical Geology, v. 24, pp. 347-364.

Ho, C.H., 1992, Volcanic risk assessment for the Yucca Mountain high-level nuclear waste repository site: presented at the 29th International Geological Congress held in Kyoto, Japan, August 25-September 4, 1992.

Naumann, T.R., Feuerbach, D.L., and Smith, E.I., 1991, Structural control of Pliocene volcanism in the vicinity of the Nevada Test Site, Nevada: An example from Buckboard Mesa [abs.]: 87th Annual Meeting/Cordilleran Section, March 1991, San Francisco, California, v. 23, no. 2, p. 82.

Sheridan, M.F., 1992, A Monte Carlo technique to estimate the probability of volcanic dikes: Proceedings, High Level Radioactive Waste Management, v. 2, p. 2033-2038.

Smith, E.I., Feuerbach, D.L., Naumann, T.R., and Faults, J.E., 1990, The area of most recent volcanism about Yucca Mountain, Nevada: Implications for volcanic risk assessment: American Nuclear Society: Proceedings of the International Nuclear Waste Symposium, American Nuclear Society of Civil Engineers, April 1990, v. 1, pp. 90-97.

Smith, E.I., Feuerbach, D.L., Naumann, T.R., and Ho, C.H., 1991, Volcanic risk assessment studies for the proposed high-level

radioactive waste repository at Yucca Mountain, Nevada, USA [abs.]: International Conference on Active Volcanoes and Risk Mitigation, Naples, Italy, August 27-September 1, 1991, Abstract Volume.

Wells, S.G., McFadden, L.D., Renault, C.E., and Crowe, B.M., 1990, Geomorphic assessment of late Quaternary volcanism in the Yucca Mountain area, southern Nevada: Implications for the proposed high- level radioactive waste repository: Geology, v. 18, p. 549-553.

Wells, S.G., Crowe, B.M., McFadden, L.D., Turrin, B.D., Champion, D.E., and Fleck, R.J., 1992, Measuring the age of the Lathrop Wells volcanic center at Yucca Mountain: Science, v. 257, p. 555-558.

In sum, this literature assigns late Quaternary to early Holocene ages to the most recent volcanic activity in Crater Flat and the Sleeping Buttes volcanic center along the west side of the NAFR complex. Some of the literature (Smith et al. 1990) proposes an area of most recent volcanism that includes Crater Flat, Yucca Mountain, and Buckboard Mesa. The literature concludes that there is a significant probability of future volcanism activity occurring at NTS, most likely in the western portion. The volcanism section must be rewritten to present the current state of knowledge about volcanic hazard and the assessment of future risk.

147

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-115 **Geotechnical Hazards**

148 ***COMMENT 067*** The Geotechnical Hazards section could benefit from a map that identifies those areas which are prone to slope instability, soil stability problems, and ground instability. Sites with such problems can be engineered to mitigate the hazard. The text discussion is generic, but the suggested inclusion of a map outlining the hazard-prone areas would resolve the comment.

PAGE 4-118 **Geologic Resources**

149 ***COMMENT 068*** The Geologic Resources section should be expanded to include a more comprehensive discussion. The potential for geologic resources must be considered in any discussions of future public access to all or portions of NTS, TTR, and/or the NAFR complex. The following reports provide a more definitive treatment of mineral and energy resources than that contained in the draft EIS:

Bell, E.J., and Larson, L.T., 1982, Overview of Energy and Mineral Resources for the Nevada Nuclear Waste Storage Investigations, Nevada Test Site, Nye County, Nevada, NVO-250, Nevada Operations Office, U.S. Department of Energy, Las Vegas.

Quade, J., and Tingley, J.V. (1983), A mineral inventory of the Nevada Test Site, and portions of the Nellis Bombing and Gunnery Range, southern Nye County, Nevada: DOE/NV/10295-1.

STATE GOVERNMENT 2 (CONTINUED)

Johnson, C. and Hummel, P., (1991), Yucca Mountain: Nuclear Waste or Resource Rich: Geotimes, American Geological Institute, v. 36, N. 8, August.

Cashman, P., and Trexler, J., The Mississippian Antler Foreland and Continental Margin in Southern Nevada: The Eleana Formation Reinterpreted in Cooper, J., and Severns, C., (1991) Paleozoic Paleogeography of the Western United States II: Pacific Section SEPM, vol. 67, p. 271-280.

150 The text on Page 4-122, lines 1-4, describes an assessment of the geothermal resource potential of the NTS by the Harry Reid Center. This assessment is not cited as a reference to the draft EIS. However, on lines 3 and 4, the conclusion of the assessment is that the resource potential was judged to be suitable for the development of a binary geothermal power plant. This conclusion appears to be at odds with the conclusion on Page 4-120, line 29, that water temperatures in the region are insufficient for commercial power development. Also, the focus of the geothermal resource discussion is on electric power generation. The section is devoid of any discussion of geothermal resources for commercial and industrial applications.

PAGE 4-122 **Soils**

COMMENT 069 This section acknowledges the overall sparsity of information on soils of the NTS but suggests that "small areas of local interest" have been studied. The remainder of Section 4.1.4.3 on soils contains

references to various activities that may have affected soils, but there are no references to literature that contains descriptive data on the soils. This oversight should be corrected by citing sources of existing soils information on "small areas of local interest" on the NTS.

151

PAGE 4-123
Lines 16-18

Radiological Sources in Soil

COMMENT 070

The text states "this section describes the baseline soils conditions at the NTS, the NAFR Complex, and the Tonopah Test Range, as documented previously in the *Final Environmental Impact Statement, Nevada Test Site, Nye County, Nevada* (ERDA, 1977)." As acknowledged on Page 4-122, lines 15-17, soil formation and loss is a dynamic process. Soil movement and loss is a common occurrence throughout the NTS and surrounding areas. The "baseline" soil conditions need to be updated to present-day conditions, so that any impacts can be appropriately assessed.

152

The ERDA 1977 document addressed the Nevada Test Site only; the NAFR complex and TTR were not addressed. This EIS must comprehensively address soils on the NAFR complex and TTR.

PAGE 4-124
Lines 19-33

Radiologic Sources In Soil

COMMENT 071

153

This section of the EIS should include an estimate of radiologic sources in surface soils for different geographic areas of the NTS,

153 cont.

(e.g., Yucca Flat, Frenchmen Flat, Area 25, etc.) Without a detailed understanding and disclosure of any radiological contamination in the soils at NTS, DOE officials will be unable to make definitive short and/or long-term resource management and infrastructure development decisions for the site.

PAGE 4-125

Safety Tests

COMMENT 072

154

The Safety Tests section could benefit from a table that lists all areas contaminated by safety tests of plutonium-bearing materials, the total acreage contaminated by each test, and the current estimates of the total inventory of the radiological source term remaining. Such a listing has relevance to discussions of future activities, future facility locations, and public access.

PAGE 4-138
Lines 16-19

Surface Hydrology

COMMENT 073

155

The text states that the potential exists for sheet flow and channelized flow through arroyos to cause flooding throughout the NTS, however, because of the size of the NTS, no comprehensive floodplain analysis has been conducted in the NTS region. Yet Tables 4-16 and 4-17 on Page 4-140 indicate that, based on numerous DOE orders, Executive orders, and federal regulations, such comprehensive floodplain analyses are mandatory. The text identifies only five arroyos on NTS which have been assessed for flood hazard. Flood assessments for the Area 3 and Area 5 low-level waste sites are presented. It would appear DOE is in violation of

155 cont.

these requirements. DOE should realize that the size of the facility does not constitute an exemption to these requirements. The EIS should describe plans for attaining compliance with these federal requirements and commit to implementing these plans in the ROD.

PAGE 4-138
Lines 17-19

Surface Hydrology

"However, because of the size of the NTS, no comprehensive floodplain analysis has been conducted in the NTS region to delineate the 100-and 500-year flood plains."

156

COMMENT 074

A specific flood plain analysis must be incorporated or referenced in the Final EIS for major projects included in the proposed action for the EIS, (e.g., infrastructure improvements to support assembly, disassembly, and storage of nuclear weapons, new or expanded nuclear waste disposal sites [Area 3 site], new waste treatment facilities, establishment of a NTS solar enterprise zone, etc.).

PAGE 4-141

Springs and Impoundments

157

COMMENT 075

The discussion of springs and impoundments focuses on springs at the NTS and impoundments in the Ash Meadows area south of the NTS. There is no mention of springs or impoundments which may exist at TTR or the NAFR Complex. A table listing all the springs in the region, their location, and discharges would be helpful. Also, a table listing all the impoundments in the region, their location, and storage capacity would be appropriate.

PAGE 4-143
Lines 7-10

Springs and Impoundments

158

COMMENT 076

The following statement is made: "Prior to any actions that may result in discharges to these limited surface water occurrences, reviews will be made to ensure compliance with the appropriate Executive orders and federal and State environmental laws and regulations." The text should also make the commitment that no actions shall be taken which could result in a lessening of spring discharge and a resultant reduction in vegetated area.

Lines 18-20

"Any actions that could affect these impoundments [Crystal Reservoir] will receive the same type of review for regulatory compliance as that discussed above for the springs discharge areas [on the NTS]."

COMMENT 077

Legal as opposed to regulatory actions may be triggered if the groundwater recharge flow from subbasins within NTS to Ash Meadows are altered (i.e., at Crystal Reservoir). Ash Meadows is important since it contains a water-filled cavern know as Devil's Hole where the endangered pupfish *Cyprinodon* resides. Because of past litigation, judicial oversight of the water level in Devil's Hole is in effect.

In a related matter, while the State Engineer's Office has not historically pursued compliance with Nevada water law at the NTS, such compliance would be sought for significant changes in the use of the site. This is based on the contention that Congress reserved

STATE GOVERNMENT 2 (CONTINUED)

sufficient water to support the mission of the NTS. That mission is confined to nuclear testing and related research and development activities only, as opposed to waste disposal and/or management and disposition of special nuclear materials. Accordingly, if the proposed action in the Final EIS requires additional water withdrawals at the NTS that are not directly related to the nuclear testing mission, the State will require permits for such withdrawals. The Final EIS should acknowledge this policy.

159

PAGE 4-143
Lines 24-25

Surface Water Characteristics

COMMENT 078

160

The chemical and radiological analyses for eight springs on the NTS as reported by Moore (1961) and presented in Table 4-18 are over 35 years old. More current analyses should be presented. Analyses from all other springs in the region should also be presented.

161

Also, the surface water characteristics section addresses chemical and radiological characteristics of surface water (springs and impoundments) on NTS only. The section should be expanded to include chemical and radiological characteristics of springs and impoundments on the NAFR Complex and the TTR.

PAGE 4-145
Lines 11-12

Surface Water Characteristics

"The containment ponds were constructed to catch contaminated runoff from the tunnel complexes [e.g., tritiated water]."

STATE GOVERNMENT 2 (CONTINUED)

COMMENT 079

162

Table 4-22 in the EIS presents containment pond gross beta analysis results for eight contaminated ponds and three seepages on the NTS. The data indicate that gross beta concentrations in at least three of the Area 12 containment ponds exceed the Derived Concentrations Guides (DCG) for ingested water under DOE Order 5400.5. (DCG is based on a strontium-90 value for drinking water of 4 mrem/yr effective dose equivalent.) While we acknowledge the referenced pond water is not considered a drinking water source, the EIS nevertheless fails to describe remediation alternatives for the contaminated ponds. Since water discharges from the tunnels to the ponds at the Area 12 complex is a State permitted activity, the EIS must discuss alternative remediation strategies (i.e., re-infiltration to groundwater, tritium capture technologies, etc.). Of note, in the State's scoping comments, we stated that the EIS "should address remediation, waste management, and appropriate D&D [decontamination and decommissioning] activities for contaminated tunnel facilities on the test site . . . since some of the tunnels [have] released, and may still be releasing, radioactivity to the environment."

PAGE 4-148

Groundwater

COMMENT 080

163

This section should contain a map showing groundwater flow on the NTS, as Figure 4-41, Page 4-155, does for the Tonopah Test Range. The map should utilize or be consistent with such maps for the Yucca Mountain Project and also show groundwater flow for the Death Valley and Amargosa Valley regions.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-150 **Groundwater**

164 ***COMMENT 081*** Table 4-23, which lists perennial yields and peak historic water demands for the 10 hydrographic basins on the NTS, should be expanded to include hydrographic basins for the NAFR Complex and TTR, including all water supply wells. A map should be included which delineates the hydrographic basins. The text notes that an effect of the water withdrawals has been a lowering of water levels in the vicinity of some water supply wells and localized changes in groundwater flow directions. A table should be included which lists supply wells with documented annual pumpage rates, water level data, and the magnitude of any declines.

165 The text on Page 4-150, lines 17-25, should be revised to clearly state which wells in Yucca Flat have water level declines due to extraction rates which exceed perennial yield, and which have declines that may be affected by underground nuclear detonations. The effect of excess pumping in Yucca Flat cannot be assessed without a clear distinction between historic pumping rates and past underground detonations.

166 Seaber et al. (1995) and Clary et al. (1995) cited in this section are not included in Section 4.8 References.

PAGE 4-153 **Groundwater Flow and Gradients**

167 ***COMMENT 082*** The section on groundwater flow and gradients should be expanded to discuss in detail flow conduits between areas of high water supply

STATE GOVERNMENT 2 (CONTINUED)

167 cont. pumpage and underground nuclear detonations on the NTS and down gradient areas of concern such as Beatty, Indian Springs, Ash Meadows, Amargosa Valley, and Death Valley. A federal requirement to maintain a certain water level in Devil's Hole to protect endangered pupfish is such a concern, among others.

COMMENT 083 The text on line 16 states "the present conceptual groundwater flow model for the Death Valley flow system is derived primarily from Winograd and Thordarson (1975) and updated by Waddell et al. (1984) and by Laczniak et al. (1992)." In the past few years, based upon studies performed for the NTS environmental restoration program and the Yucca Mountain high-level nuclear waste repository siting program, additional conceptual groundwater flow models have been proposed.

168 The EIS should acknowledge these other models and discuss the variances in the models and possible effects on understanding flow magnitude and direction. Examples of other literature are the following:

PAL Consultants Inc., 1995, A Conceptual Model of the Death Valley Ground-Water Flow System, Nevada and California: Prepared for U.S. Department of Interior, National Park Service.

PAL Consultants Inc., 1995, Evaluation of Scientific Literature Pertaining to the Conceptualization of the Death Valley Ground-Water Flow System, Nevada and California.

Prepared for U.S. Department of Interior, National Park Service.

Prudic, D., Harrill, J., and Burbey, T., 1993, Conceptual Evaluation of Regional Ground-Water Flow in Carbonate-Rock Province of the Great Basin, Nevada, Utah, and Adjacent States: U.S. Geological Survey Open File Report 93-170.

D'Agnese, F.A., 1994, Using Geoscientific Information Systems for Three-Dimensional Modeling of Regional Ground-Water Flow Systems, Death Valley Region, Nevada and California: Colorado School of Mines, Ph.D. thesis.

Faunt, C.C., 1994, Characterization of the Three-Dimensional Hydrogeologic Framework of the Death Valley Region, Nevada and California: Colorado School of Mines, Ph.D. thesis.

Bredehoeft, J., King, M., and Tangborn, W., 1996, An Evaluation of the Hydrology at Yucca Mountain: The Lower Carbonate Aquifer and Amargosa River: Prepared for Inyo County, California and Esmeralda County, Nevada.

Dettinger, M., Harrill, J., Schmidt, D., and Hess, J., 1995, Distribution of Carbonate-Rock Aquifers and the Potential for their Development, Southern Nevada and Adjacent Parts of California, Arizona, and Utah: U.S. Geological Survey, Water-Resources Investigations Report 91-4146.

PAGE 4-153 **Water Balance**

169 ***COMMENT 084*** The text in the water balance section suffers from the lack of a map which graphically displays the Death Valley flow system, its recharge areas, generalized flow direction, and identified discharge areas. Figure 4-41 shows the generalized flow directions in alluvial material for the TTR. A similar map or maps are recommended for the NTS and the NAFR complex and for the volcanic aquifer and the carbonate aquifer.

PAGE 4-155 **Groundwater Flow**
Figure 4-41

170 ***COMMENT 085*** See Comment 080.

PAGE 4-155 **Groundwater Flow**
Lines 6-12

171 ***COMMENT 086*** For completeness, the discussion on lines 6-12 on spring discharge should tie back to Table 4-18, Chemical and radiochemical analyses of water from springs on the NTS (Page 4-144), with another table listing all springs on the NTS and their discharge rate.

172 As stated in a previous comment, any table that lists springs should be expanded to include springs in TTR and the NAFR complex

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-159 **Groundwater Quality**
Lines 5-6

173 ***COMMENT 087*** The text states "Periodic monitoring of groundwater from drinking-water wells indicate that no volatile organic compounds are present." This statement should be supported with a literature or report citation.

PAGE 4-159 **Radiological Sources in Groundwater**

174 ***COMMENT 088*** This section is insufficient regarding information on groundwater at the NTS where radionuclide levels exceed the EPA standards for drinking water (See Comment 137). Information should be added here regarding contaminated groundwater as to location, extent, and type of contamination. A table similar to Table 4-27 and a map based on empirical data of where contaminated groundwater occurs at the NTS should be provided.

175 ***COMMENT 089*** On line 14, the text states "The total remaining inventory [at the NTS] under, or within 100 m (330 ft.) of the water table is estimated to be 112 million Ci [curies]." To validate the referenced 112 million Ci mentioned, data about the number of nuclear detonations by regional area (i.e., Yucca Flat, Pahute Mesa, etc.) should be provided in the EIS. Accordingly, the EIS should depict such information either graphically (3-D) or in table format. The data should indicate grouped shot locations by regional area, along with estimated depth of detonation. Such information would provide the

STATE GOVERNMENT 2 (CONTINUED)

reader a better understanding of groundwater contamination throughout the impacted regions.

COMMENT 090 To evaluate the consequences of the entry of the hydrologic source term (the quantity of radioactivity that might actually enter the groundwater) into the hydrogeologic environment, the text indicates that DOE has sponsored two long-term studies: The Hydrologic Resources Management Program and the Long-Term Hydrologic Monitoring Program. Cursory conclusions from the Hydrologic Resources Management Program are presented. No results or

176 conclusions from the Long-Term Hydrologic Monitoring Program are presented. Results to date from both programs need to be discussed in some detail so that impacts from contamination of the groundwater pathway can be adequately assessed.

The section on radiologic sources in groundwater also mentions on-

177 going studies by the DOE Environmental Restoration Program to help reduce the current levels of uncertainty concerning both the mechanisms and consequences of radionuclide transport via groundwater flow at the NTS. This section should be expanded to discuss current results from studies under the Environmental Restoration Program. The discussion should include a characterization of the level of uncertainty involved with defining the groundwater pathway.

178 This section should also include a discussion of radiologic sources at TTR and the NAFR Complex. The Double Tracks site on the NAFR Complex is an example.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-163 **Water Supply**

179 ***COMMENT 091*** This section focuses entirely on availability. It should also discuss water availability for TTR and the NAFR Complex. Under the Federal Reserve Water Rights Doctrine, the NTS is entitled to withdraw water necessary to support the NTS missions. It is assumed that the same doctrine applies for the TTR and NAFR complex missions. The text indicates that water resources of the Alkali Flat-Furnace Creek Ranch Basin are fully appropriated and that any water appropriation beyond the missions of the NTS might not be possible. Given that discussion, what scenarios does DOE envision for the NTS, TTR, and the NAFR complex which are beyond the current missions? What unappropriated groundwater in the Ash Meadows Basin does DOE contemplate for future water supplies?

180

181

PAGE 4-164 **Table 4-28. Materials Used in Underground Nuclear Testing**

182 ***COMMENT 092*** Table 4-28 lists materials used in underground nuclear testing. Which of these materials is defined as a hazardous or toxic material by the U.S. Environmental Protection Agency? If any such materials are identified, their impact along the groundwater pathway must be assessed.

PAGE 4-165 **Water Supply**
Line 10

"Water used for other activities **may** [emphasis added] require the appropriation of the water in accordance with Nevada water law."

STATE GOVERNMENT 2 (CONTINUED)

COMMENT 093 A previous comment concerning appropriation of water for new mission activities (See Comment 077) also applies here. Again, the State **will** require permits for appropriation of water that is considered outside of existing defense missions pursuant to the Public Land Orders for the NTS. The word "may" must be changed to "will" in the Final EIS.

183

PAGE 4-167 **Monitoring Programs**

COMMENT 094 This section describes the current programs DOE sponsors on and around the NTS. The types of monitoring currently include water supply, ambient water quality, radioactive waste management, characterization and research, and water level. It is important that the EIS present, in tabular form, the historical data developed under each of these monitoring programs. Trends in these datasets with time is the key to detecting future impacts to the hydrologic regime and the environment.

184

PAGE 4-170 **Biological Resources**
Line 3

COMMENT 095 The sentence about "the transition zone between the Mojave Desert and Great Basin" should contain citations to literature that supports the use of this term, e.g., Beatley (1975, 1976). The ecological significance of the so-called "Transition Desert" ecotone has been well documented and should be acknowledged in this section. The overwhelming paucity of information on NTS ecosystems is apparent here and stands as an example of why the purpose of the

185

186

STATE GOVERNMENT 2 (CONTINUED)

186 cont.

Resource Management Plan Framework in Volume 2 must be acknowledged both in the Abstract and the Introduction of the EIS.

PAGE 4-196 **Recorded Cultural Resources**
Line 15

COMMENT 096

187

This sentence states that only cultural resource sites within the boundaries of the NTS are addressed, yet Figure 4-47, Page 4-197, depicts sites outside the NTS. The figure should be revised to exclude sites outside the NTS to avoid confusion.

PAGE 4-197 **Figure 4-47**

COMMENT 097

188

The bold boundaries within the NTS are shown on no other map in the EIS, yet there is no indication of what these borders depict. The legend to the figure should clarify this, or the boundaries should be deleted from the figure.

PAGE 4-219 **Radiological Contamination**
Line 28

"The *Contaminated Areas Report* (1992) published by Reynolds Electrical and Engineering Co. provides a complete listing and maps of all the identified radiation-contaminated areas on the NTS. This report also includes the contaminated areas that are found on the Tonopah Test Range and the NAFR complex."

COMMENT 098

189

According to the referenced report, there are 230 contaminated areas on the NTS, the Tonopah Test Range, and the NAFR complex. Collectively, these areas cover 52 square miles. Because radiological contamination is one of the primary environmental impacts caused by nuclear testing, the Final EIS must provide a map and a listing of the contaminants at the referenced sites. In fact, the EIS should identify each site in a table by number. The table should include a legal description of each site along with a general description of the type of contamination that is suspected at the site. The description should also include the date the site was contaminated, along with any planned remediation action for site cleanup. In any event, State officials are requesting a copy of the referenced "*Contaminated Areas Report*".

189 cont.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-220 **Ecological Studies**
Line 17

COMMENT 099

190

This section should contain literature citations that support the information given here. Also, the section should acknowledge the detailed ecological information acquired for the Yucca Mountain Project and should reflect that such information was used in the EIS.

PAGE 4-221 **Off-Site Environmental Surveillance**
Line 23

COMMENT 100

191

The EIS fails to provide any background or history that lead to the development of the NTS Off-Site Environmental Surveillance program. Without the historical background, the reader is deprived of DOE's "record" of offsite contamination. Since this is the first EIS to be developed for the site in nearly 20 years, such information is vital for understanding why radiological monitoring activities are

191 cont.

conducted at the site, including the fact that current off-site monitoring typically shows no off-site contamination.

PAGE 4-228
Line 14

Land Use (Tonopah Test Range)

"Many of the consequences described in this chapter were previously presented in the 1975 Environmental Assessment (ERDA, 1975) and in the EIS prepared by the DOE for U.S. Air Force operations in 1990."

192 ***COMMENT 101*** The EIS fails to provide a specific reference to the EIS prepared by the DOE for the U.S. Air Force in 1990.

PAGE 4-239
Line 4

Soils

193 ***COMMENT 102*** Because of the unique situation regarding plutonium contamination in soils at the TTR, there should be a summary of that information here along with the literature references that apply. This should include the soil inventory for TTR developed by the Department of the Interior (DOI 1977). Omission of this in the draft EIS exhibits the lack of attention by DOE to using documented environmental information that is available.

PAGE 4-243

Biological Resources

194 ***COMMENT 103*** Because of the plutonium in the TTR ecosystem, there should be a summary of the related biological information here along with the literature references that apply. Neither Section 4.2.6, Biological

194 cont.

Resources, nor the references cited provide such information. The cross reference on line 18 to "Section 2.0 of Appendix F, Biological Resources" is incorrect. Section E.2, Page E-1, is "Methods and Assumptions of Analysis". "Biological Resources" is in Section E.2.6, Page E-19.

PAGE 4-254
Line 19

Land Use Designations (Project Shoal Area)

"... however, the Project Shoal Area is periodically used by the U.S. Navy for military maneuvers. The U.S. Navy used this site pursuant to a Memorandum of Understanding with the Atomic Energy Commission. Because the Project Shoal Area was withdrawn for atomic testing, the DOE has no authority to grant use of the site to the U.S. Navy for military maneuvers."

COMMENT 104

195 The referenced discussion about land use and control of the Project Shoal site is confused, misleading, and otherwise un-intelligible. The Final EIS must clarify ownership, management, and planned short and long-term land-use control of the site. The Project Shoal site contains groundwater contamination which DOE has committed to address through a corrective action strategy and closure program.

In a related matter, State officials recently submitted formal scoping comments on the U.S. Navy's proposed "Master Land Withdrawal EIS." The Navy's EIS specifically includes the withdrawal of the Project Shoal site, using congressional withdrawal under the Engle Act pursuant to PL. 99-606. Hence, the Navy's proposed withdrawal and its relationship to DOE's corrective action strategy for cleanup of the site along with short and long-term land use control and

196

STATE GOVERNMENT 2 (CONTINUED)

196 cont

management responsibility -- given the "unknowns" about deep groundwater contamination and flows -- must be clarified in the Final EIS. DOE should also be aware that State officials will seek the development of an Environmental Assessment to evaluate alternative corrective action strategies contemplated for the Project Shoal site.

PAGE 4-256 **Project Shoal Area Airspace**
Figure 4-55

197 ***COMMENT 105*** Figure 4-55 contains a reference to B-18 (Bombing Range 18). There is no B-18; the correct designation is B-19.

PAGE 4-258 **Soils**
Line 10

COMMENT 106 The absence of any site specific information on soils for the Project Shoal Area is disturbing and suggests that DOE failed to characterize the environment before having used it. Before proceeding with
198 Environmental Restoration Program activities at the site, DOE must prepare an Environmental Assessment that characterizes the environment. Such a commitment must be included in the Record Of Decision for the NTS Final EIS.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 4-270 **Soils**
Line 13

COMMENT 107 The absence of any site specific information on soils for the Central Nevada Test Area is also disturbing and suggests that DOE again failed to characterize the environment before having used it, e.g., for
199 Project Faultless. Before proceeding with Environmental Restoration Program activities at the site, DOE must prepare an Environmental Assessment that characterizes the environment. Such a commitment must be included in the ROD for the NTS Final EIS.

VOLUME 1, CHAPTERS 1-9 (Part B)

5.0 ENVIRONMENTAL CONSEQUENCES

PAGE 5-7 **Waste Management Program**
Lines 8-10 "Under Alternative 1, ongoing Waste Management Program activities at the NTS would continue at current levels and are consistent with current site and land-use designation definitions. Therefore, no new impacts to land use are expected."

200 ***COMMENT 108*** As mentioned earlier, the NTS was not established to serve as a waste disposal site for off-site generated defense wastes. In the State's scoping comments for this EIS, we stated that "the only action appropriately described as no action at the NTS includes only national defense and nuclear weapons testing activities defined under

STATE GOVERNMENT 2 (CONTINUED)

the public land orders as consented to by the State of Nevada for the NTS withdrawal."

PAGE 5-18
Line 28

Socioeconomics

"This section [from Page 5-18 through 5-28] discusses the potential socioeconomic effects associated with Alternative 1 [No Action]. The purpose of this section is to identify and analyze the major socioeconomic issues related to each possible future activity at the sites."

COMMENT 109

The premise for this section and for the Socioeconomic sections for each of the other alternatives is fundamentally wrong. The section on socioeconomics does not discuss or address the "major socioeconomic issues" related to various activities. Instead, the EIS makes the unstated and erroneous assumptions that (1) all "major" socioeconomic issues/effects will be related to employment or population changes associated with the activity, and (2) all such changes are positive. This is not socioeconomic impact assessment.

201

No attempt is made to employ a systematic socioeconomic impact assessment methodology to identify the range of positive and negative impacts (i.e., costs vs. benefits) associated with NTS activities. Instead, population and employment projections for the No Action Alternative are cursorily examined in relation to population, employment, housing, and public services in each of the identified counties/cities. The results are predictably insignificant. No attempt is made to understand or model the socioeconomic systems within which the activities will be taking place.

STATE GOVERNMENT 2 (CONTINUED)

202

The socioeconomic analysis does not examine the potential impacts of various NTS activities on Nevada's principal industry, tourism/gaming, especially the potential for negative impacts as a result of stigmatizing events associated with NTS nuclear/hazardous materials transportation (See Comment 059). This must be included if the Final EIS is to be adequate.

203

The socioeconomic section fails to assess the negative impacts associated with non-tourism/gaming population growth associated with NTS activities. This requires modeling the unique tax/revenue system of the State - one in which tourism/gaming revenues subsidize all other forms of growth. Without such an analysis, the costs to the State of increased NTS-related population growth cannot be assessed (See also the Comment Summary Section under "Socioeconomics").

Research on the impacts of non-gaming related growth can be found in:

NWPO-SE-022-89 "Yucca Mountain Socioeconomic Project: Interim Report on the State of Nevada Socioeconomic Studies." (June, 1989)

PAGE 5-20
Lines 33-34

Economic Activity, Population, and Housing

"It was estimated that a 6,576 person workforce would provide the necessary support to maintain current level of operations.

STATE GOVERNMENT 2 (CONTINUED)

204 ***COMMENT 110*** The EIS fails to document where or how the "6,576" labor force number was generated. Currently, the NTS has a labor force of around 3,000 workers. Under conditions of the ongoing moratorium on nuclear testing, this lower number seems more reasonable as an employment baseline for planning purposes. In any event, the EIS must document and clarify the labor force number referenced above.

PAGE 5-28 **Defense Program**
Lines 11-12 "These stockpile tests would be conducted on Pahute Mesa and/or Yucca Flat . . ."

PAGE 5-29
Lines 4-6 "The yield or size of underground nuclear explosion is controlled by the Threshold Test Ban Treaty to a maximum high-explosive equivalent of 150kt."

205 ***COMMENT 111*** The EIS fails to provide a rational for reserving Pahute Mesa for future weapons testing. Since any future tests would be limited to 150kt, the need for testing on Pahute Mesa must be specifically defined in the EIS. Also, the status of DOE's authority to use Pahute Mesa for testing during the next 10 years cannot be assured because of the pending Nellis withdrawal.

PAGE 5-31 **Defense Programs**
Line 16

206 ***COMMENT 112*** In view of the acknowledged paucity of information on NTS soils (See Section 4.1.4.3), the basis for considering that impacts to soils are not significant is not apparent. If DOE has simplistically

STATE GOVERNMENT 2 (CONTINUED)

considered the loss of 80 acres of soil to be insignificant, that fact should be stated. Otherwise, the empirical basis for the statement should be provided.

206 cont.

On line 25, DOE should again state the empirical basis for considering that impacts on soils will not be significant.

PAGE 5-31 **Waste Management Program**
Lines 33-34 "Craters resulting from underground nuclear tests in Area 3 that meet certain criteria . . ."

207 ***COMMENT 113*** The EIS fails to reference or document what "certain criteria" were used in selecting radioactive waste disposal craters at the NTS. The Final EIS must document and describe the existence of such criteria and how these criteria were developed.

PAGE 5-32 **Environmental Restoration Program**
Line 23

208 ***COMMENT 114*** The areal extent and nature of the soils that would be lost for the long term should be stated and not simply dismissed. Also, how the sites are to be reclaimed should be addressed in view of the soil to be lost. This is an example of where the use of information from the Yucca Mountain Project would be appropriate.

PAGE 5-34 **Waste Management Program**
Lines 1-4 "Potential flood hazards on the NTS and NAFR Complex are presented in Sections 4.1.5 of Chapter 4.0, Affected Environments.

STATE GOVERNMENT 2 (CONTINUED)

Siting of waste management facilities is a critical issue in terms of protecting the facilities from floods"

209 ***COMMENT 115*** While we concur with the need to protect waste management facilities from floods, the EIS fails to provide any detailed analysis concerning whether or not the disposal sites on NTS actually meet applicable federal flood regulations (see Comments 73 and 74).

PAGE 5-39 **Defense Programs**
Lines 6-9
"... because of the conditions at the NTS (long travel paths, sorptive geologic media, ... and the depth of the stockpiled holes), it is not considered likely that any significant impacts [from a future nuclear test] would occur in areas down gradient of the underground testing locations [i.e., contamination of groundwater]."

210 ***COMMENT 116*** Without specific data on the depth and location of existing nuclear test holes that might be used to conduct a future nuclear test, conclusions that suggest that the likelihood of any significant impacts to the groundwater would not occur are simply not supportable.

211 Evidently, DOE has prepared a number of undisclosed test holes that could be used for future nuclear tests. A map and listing of these holes, including their proximity to the groundwater must be included in the Final EIS to qualify statements that contamination of groundwater would be unlikely.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 5-39 **Waste Management Program**
Lines 30-31
"No impact to groundwater from waste management operations would occur during the timeframe covered by this EIS and long into the future."

212 ***COMMENT 117*** Although the required Performances Assessments have not been completed for either the Area 5 or the Area 3 disposal sites, State officials do agree that DOE has conducted some tests that do indicate that soil moisture (i.e., water falling to the surface in the form of precipitation) may not reach the groundwater. However, such studies are limited to the Area 5 disposal site and cannot, as the EIS attempts to infer, be applied to the Area 3 disposal site. The text in the EIS should be modified to reflect these facts.

PAGE 5-41 **Biological Resources**

213 ***COMMENT 118*** Throughout this section, the inadequacy of the database on NTS ecosystems is apparent. A statement acknowledging this fact should be inserted with a cross reference to the Resource Management Plan Framework in Volume 2 of the EIS as a future remedy to the problem.

PAGE 5-61 **Waste Management Program**
Lines 31-32
"The results of the very conservative approach to estimating exposure is then used to establish design, operation, closure, and waste acceptance criteria for the waste management facilities."

214 ***COMMENT 119*** A discussion about DOE's current plan to modify the performance assessment process (revision to 5820.2A) should be provided in the EIS to clarify any potential changes to the human intrusion pathway scenarios.

PAGE 5-66 **Waste Management Program**
Lines 17-18 "Failure to so certify would preclude the Secretary of the Interior from accepting the affected areas [NAFR] into public land status."

215 ***COMMENT 120*** This statement is not correct. PL. 99-606 provides authority to the Secretary of the Interior to accept jurisdiction over any lands proposed for relinquishment without regard to contamination issues.

PAGE 5-102 **Socioeconomics**
Line 13 "This section discusses the potential socioeconomic effects associated with Alternative 2 [Discontinue Operations]. ... The loss of employment and personal income and increase in unemployment associated with Alternative 2 would result in substantial short-term adverse effects to the regional economy; however, economic and natural growth in the region of influence is expected to compensate for these reductions over time."

216 ***COMMENT 121*** Because of the non-systematic way in which the socioeconomic analysis sections of the EIS have been done, there is no methodological basis for either of these conclusions. While shut down of NTS activities would result in worker layoffs and likely population out-migration to some degree, it is not clear that the short-term economic and other effects would be negative or that

negative economic impacts might not be compensated for by positive impacts in other socioeconomic areas (i.e., the opening of the NTS to other non-federal uses not considered in the EIS). Likewise, it is not possible to draw conclusions about the longer term ability of the economy to compensate for projected reductions. That is not to say the conclusion is patently false - only that the analysis in the EIS is not sufficient to substantiate it.

PAGE 5-113 **Geology and Soils**
Line 16

217 ***COMMENT 122*** The basis for finding no adverse impact to soils under Alternative 2 should be given. There is no such basis in Chapter 4 of the draft EIS.

PAGE 5-114 **Biological Resources**
Line 1

218 ***COMMENT 123*** The basis for finding no adverse impact to biota under Alternative 2 should be given. There is no such basis in Chapter 4 of the draft EIS. Information should be given on the extent and location of the man-made water sources at NTS along with lists of the species that use them and estimates of the numbers of animals involved.

PAGE 5-141 **Transportation of Materials and Waste**

219 ***COMMENT 124*** This section of the EIS should state that an estimated 25,000 shipments of radioactive waste (excluding in-state shipments to the

STATE GOVERNMENT 2 (CONTINUED)

NTS from contaminated sites in Nevada) would occur over a ten year period if the Expanded Use Alternative is adopted. Furthermore, nowhere in the EIS is the difference in estimated waste shipments presented for Alternatives 1 and 3. While the number of estimated waste shipments is contained in the tables of the EIS, they are not explicitly stated in the text of the document, which serves to obfuscate the purpose and intent the National Environmental Policy Act and its implementing regulation CEQ 1500.1(b).

219 cont.

PAGE 5-144
Line 25

Socioeconomics

This section contains a discussion of the potential socioeconomic effects under Alternative 3 [Expanded Use].

COMMENT 125

The same comments apply here as for the socioeconomic section for Alternative 1 (See Comment 109). However, with respect to the Expanded Use alternative, the lack of an adequate and systematic socioeconomic impact assessment methodology is especially destructive of the quality and veracity of the EIS. Without a systematic impact assessment where baseline conditions are established and projected into the future and where the full range of project conditions with the potential to impact baseline conditions are systematically evaluated against the baselines, it is not possible to draw conclusions about socioeconomic conditions.

220

As is the case of socioeconomic sections for all of the EIS alternatives, this section is not a socioeconomic assessment at all. Rather, it is a very limited, subjective, and incomplete review of an arbitrary set of economic variables (with no justification for the

STATE GOVERNMENT 2 (CONTINUED)

selection of those variables) that are exclusively related, in a positive way, to either population growth or population growth associated with NTS activities. As noted above, the potential negative consequences of population growth in Nevada, as a result of the State's unique revenue/tax system, are ignored altogether. This is especially problematic in the case of the Expanded Use alternative, where the EIS takes credit for possible positive effects of such growth without in any way examining the costs to the State and local communities.

220 cont.

The Expanded Use alternative is the EIS alternative most likely to cause negative risk and stigma effects. As such, the potential for such impacts must be examined in this section of the EIS.

221

Likewise, the Expanded Use alternative is likely to have the largest impact on socioeconomic variables not addressed, such as the potential impacts on the State and communities with respect to emergency response/preparedness for nuclear and hazardous materials incidents. Such impacts could be very large given the types and levels of activities contemplated under the Expanded Use alternative.

222

PAGE 5-144
Line 33

Economic Activity, Population, and Housing

"Under Alternative 3, it was assumed that direct employment would increase by 867 jobs in 1996, with a maximum of 6,718 jobs in 2000, and 4,513 jobs in 2005. It is estimated that direct payroll and purchases of goods and services would generate 2,017 additional secondary jobs in 1996; 12,774 in 2000; and 8,977 in 2005." The

STATE GOVERNMENT 2 (CONTINUED)

section goes on to summarize jobs and earning levels in Clark and Nye counties.

223 ***COMMENT 126*** No rationale whatsoever is given for the multipliers that are used in drawing these conclusions. In 1996, each new NTS job is assumed to create 2.33 secondary/indirect jobs; in 2000 the ratio is one NTS job to 1.9 secondary jobs; and in 2005 the ratio is one to 1.99. Notwithstanding the fact that all of the multipliers appear high, given the nature of the southern Nevada economy, it is not possible to evaluate the appropriateness of the numbers without the underlying assumptions and rationale being made explicit.

PAGE 5-156 **Geology and Soils**
Line 16

224 ***COMMENT 127*** This section contains no mention of soils. Soil information and assessment of any finding should be included.

PAGE 5-161 **Biological Resources**
Line 14

225 ***COMMENT 128*** Comment 118 applies here as well.

PAGE 5-226 **Socioeconomics**

226 ***COMMENT 129*** Given the information contained in the EIS and the level of analysis performed, it is not possible to determine if the jobs/population decreases postulated in the summary for Alternative 4 [Alternative

STATE GOVERNMENT 2 (CONTINUED)

Use of Withdrawn Lands] are defensible or even reasonable. Similarly, the analysis is insufficient to conclude that such net employment and population declines would, in fact, result in net socioeconomic losses to the State and counties. A much more robust assessment is required, one that examines both costs and benefits associated with postulated changes in jobs and population.

226 (cont.)

PAGE 5-233 **Geology and Soils**
Line 22

227 ***COMMENT 130*** Section 5.4.1.4 states that the consequences to soils would be the same as given in Section 5.2.1.4. The basis for finding no adverse impact to soils under Alternative 2 is not given. There is no such basis in Chapter 4 of the draft EIS for either Section 5.2.1.4 or Section 5.4.1.4. Such information should be provided, as well as the logic for finding no adverse impact to soils under Alternative 2.

PAGE 5-236 **Biological Resources**
Line 13 Defense Programs

228 ***COMMENT 131*** Section 5.4.1.6 refers to Section 5.2.1.6 for comparable findings on impacts to biota. The basis for finding no adverse impact to biota under Alternative 2 was not given. There is no such basis in Chapter 4 of the draft EIS. Such information should be given.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 5-270 **Underground Testing**

229 ***COMMENT 132*** For this paragraph, there are no data indicating the radionuclides involved in the given inventory. Information elsewhere in the report suggests that significant but unknown amounts of radionuclides have reached the groundwater from past activities. In this case, reasonable quantitative estimates of anticipated radionuclides should be given and the isotopes should be identified, as is done in Table 4-27.

PAGE 5-271 **Biological Resources**
Line 28

230 ***COMMENT 133*** The discussion of tortoise mortality should identify the "take" for the species allowed by the US Fish and Wildlife Service. Estimates of future tortoise mortality then should be derived from a table showing known accidental mortality by year since the take was established.

PAGE 5-288 **Relationship of Short Term Uses and Long Term Productivity**

231 ***COMMENT 134*** The discussion in this paragraph concerns a 10-year timeframe. Here and elsewhere where appropriate the fact should be noted that DOE Order 451.1, National Environmental Policy Act, requires that EISs such as this one be revisited each five years and updated as necessary.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 5-294 **Alternative 3**
Line 22 Nevada Test Site

232 ***COMMENT 135*** The discussion in this paragraph about soil productivity, revegetation success, and natural rehabilitation is not based on information presented elsewhere in the draft EIS. These topics should be documented and discussed in Chapter 4, Affected Environment, then cross referenced where appropriate throughout Chapter 5, including here. This is a case where the use of information from the Yucca Mountain Project would be helpful.

PAGE 5-295 **Tonopah Test Range**
Line 20

233 ***COMMENT 136*** The sentence that begins here speaks of variables of amounts of soil removed and success in rehabilitation. Nowhere in the draft EIS are such variables addressed, particularly regarding re-establishing native plant species. That information should be added to Chapter 4, Affected Environment, and cross referenced here. For example, EG&G report EGG 11265-1118 (December 1994) addresses reclamation success and secondary succession for the NTS environs and should be used for this EIS.

PAGE 5-307 **Alternative 2**
Line 9 Nevada Test Site

234 ***COMMENT 137*** This sentence speaks of "contamination of groundwater above EPA drinking standards" but nowhere is such groundwater documented as

234 cont.

to location, extent, and type of contamination. The information should be added to Chapter 4, Affected Environment, and cross referenced here. A table similar to Table 4-27 and a map of where contaminated groundwater occurs at the NTS should be provided.

PAGE 5-309 **Alternative 3**
Line 24 Nevada Test Site

COMMENT 138

235

This paragraph discusses soil to be lost to environmental restoration and fails to consider how replacement soil for reclamation purposes will be acquired. Nowhere in the draft EIS is this matter addressed. The information should be added to Chapter 4, Affected Environment and cross referenced here. This comment is similar to Comment 136.

6.0 CUMULATIVE IMPACTS

PAGE 6-1 **Cumulative Impacts**

COMMENT 139

236

This chapter is deficient with respect to methods of analysis used (See Line 23). While there is a considerable body of DOE literature regarding methods for analyzing cumulative environmental impacts, no references are included in the chapter. The reference list in Section 6.5 contains nothing but undocumented "Personal Communications." All of the so-called analyses presented in this chapter lack scientific and technical substance and are based totally on subjective judgement. This is unacceptable in view of the current state-of-the-art of the science of assessing cumulative environmental

236 cont.

impacts. Furthermore, there is a significant amount of this information available within the DOE complex.

PAGE 6-4 **Bureau of Land Management**
Line 19

COMMENT 140

237

This section should give references for the two BLM EISs mentioned in the first sentence. The discussion of the 1992 Stateline Resource Management Plan and draft EIS is seriously outdated in view of the BLM's 1994 supplement to the document. The discussion should reflect current BLM policies and the programs based on the six alternatives listed on Pages 6-5 and 6-6 and the BLM's commitment to ecosystem management (See ***Ecosystem Management in the BLM: From Concept to Commitment***, BLM/SC/G1-94/005+1736, January 1994). Because the BLM is a Cooperating Agency for the NTS EIS, it should write the section on its programs from Page 6-4 to 6-8. The same holds for the US Air Force on page 6-3 and the US Fish and Wildlife Service on Page 6-8.

PAGE 6-12 **Nevada Test Site Alternatives**
Lines 15-16 "A summary of the anticipated impacts associated with implementation of each of the NTS Alternatives, on a resource-specific basis, is presented in Table 3-1 (See Chapter 3.0)."

COMMENT 141

238

Table 3-1 provides no such summary; the correct reference is Table S-4, beginning on Page S-14.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 6-13
Lines 22-29

Transportation

COMMENT 142

239 The cumulative impact analysis presented in the EIS for transportation fails to assess the cumulative human health and environmental risks associated with the transportation of special nuclear materials and radioactive waste for Alternatives 1 and 3. In other words, nowhere in the document is a cumulative impact analysis presented for transporting both low-level waste and special nuclear materials like plutonium to the NTS. In fact, Appendix I states that "an evaluation of the transportation risks for consolidation of surplus plutonium and/or highly enriched uranium at the NTS is not within the scope of this study (Appendix I, Page I-9, lines 19-20)."

If DOE adopts a proposed action for the Final EIS that includes the transportation of special nuclear materials and radioactive waste to the NTS, then a cumulative impact analysis for transportation must be prepared that covers the combined activities of DOE's Environmental Management and Defense Programs.

PAGE 6-15
Line 5

Biological Resources

COMMENT 143

240 This section should mention the allowed "take" of desert tortoises for the NTS and the Yucca Mountain site and should report the annual take due to DOE activities since the take was established.

STATE GOVERNMENT 2 (CONTINUED)

PAGE 6-15
Lines 18-31

Air Quality

COMMENT 144

241 The cumulative impact analysis presented in the EIS for air quality is deficient of any scientific and technical substance. As mentioned above, the statements contained throughout Chapter 6 of the EIS are entirely subjective and unsupportable.

When DOE "creates" a proposed action for the EIS, an objective assessment must be conducted to determine any potential cumulative air quality impacts relevant to the proposed action, such as additional waste shipments to the NTS.

PAGE 6-16
Lines 25-29

Occupational and Public Health and Safety

COMMENT 145

242 The cumulative impact analysis presented for occupational and public health and safety issues fails to assess the additive radiological risks (i.e., above background) for both site workers and the public that would be associated with the transportation, treatment, and storage/disposal of both special nuclear materials and radioactive waste. If DOE adopts a proposed action for the Final EIS that includes the transportation of special nuclear materials and radioactive waste to the NTS, then a cumulative impact analysis for transportation must be prepared that covers the combined activities of DOE's Environmental Management and Defense Programs. This cumulative impact analysis must include analysis of occupational and public health and safety risks to both site workers and the public

from the transportation of special nuclear materials and radioactive waste.

7.0 MITIGATION MEASURES

PAGE 7-3
Line 17

Socioeconomics (Mitigation Measures)

"No adverse impacts are associated with implementation of any alternative for any socioeconomic issue (economic activity, population, housing, public finance, or public services); therefore, no mitigation measures are required."

COMMENT 146

The socioeconomic analyses contained in the EIS are so inadequate and so deficient that there is no support for this conclusion. The entire approach to socioeconomic impact assessment (if that is what this can be called) seems purposely designed NOT to look for possible or even likely impacts.

243

It is very likely that all of the alternatives contained in the EIS will have negative socioeconomic impacts that will require mitigation of some sort. Alternative 3, Expanded Use, has the greatest potential to generate negative impacts both in the "standard" effects area (i.e., significantly increased emergency preparedness/response costs, population growth that does not pay its way, additional burdens on State and local services, etc.) and in the "special" or risk effects area (stigmatization impacts to Nevada's tourism/gaming industry, etc.). The conclusion that none of the alternatives will have socioeconomic impacts that require mitigation is wholly unsubstantiated.

PAGE 7-3
Line 27

Geology and Soils

COMMENT 147

244

Section 7.4 contains no mention of soils. Mitigation measures for soil conservation and restoration should be discussed and documented. (See Comment 136)

8.0 CONSULTATION AND COORDINATION

PAGE 8-1
Line 10

Cooperating Agencies

COMMENT 148

245

Section 8.1 lists four general functions applicable to cooperating agencies (Lines 20-32). However, in the description of the specific contributions of the agencies on Pages 8-2 and 8-3, there is no insight to the four functions. This is especially notable with regard to the third function, "Ensure that ecosystem management concepts were applied to land-use impact analysis, where appropriate." The US Air Force, the US Bureau of Land Management, and the US Fish and Wildlife Service each practice ecosystem management and have relevant policies and methodologies. Nowhere is this evident in Chapter 8 or elsewhere in the EIS. The DOE's own policy regarding ecosystem management, **Land and Facility Use Policy** (December 21, 1994) is not acknowledged or mentioned in Volume 1 of the draft EIS. These oversights must be remedied in the Final EIS.

VOLUME I, APPENDICES A-F

APPENDIX A: **Description of Projects and Activities**

PAGE A-7
Line 15
Post-shot Operations.
"Residual radiation is cleaned up at the site, and the hole is plugged back to the surface."

246 ***COMMENT 149*** The EIS should address how each post-shot operation is cleaned, including disposition of cleanup residues.

PAGE A-20
Lines 17-20
Dynamic Experiments and Hydrodynamic Tests
"Under Alternative 3, it is assumed that 1,100 dynamic experiments and hydrodynamic tests would be performed during the 10-year period; high-explosive charges would be larger, and potentially hazardous materials such as beryllium, depleted uranium, deuterium, and tritium would be used."

247 ***COMMENT 150*** The quantity and activity of this radioactive material should be defined here and on Page A-11 of the EIS. On the other hand, if this information is classified, then that should be so stated in the EIS.

PAGE A-25
Lines 8-13
Interim Storage of Nuclear Weapons

COMMENT 151 With the exception of nuclear testing and limited research and development activities connected directly to the testing mission at NTS, activities such as interim storage of nuclear weapons are not

addressed in the land withdrawal orders for the site . As stated elsewhere in these comments, if DOE adopts a proposed action that includes interim storage of nuclear weapons (or other non-testing activities), then issues concerning compliance with the restrictions in the existing land withdrawal orders must be evaluated through the NEPA process and/or consented to by the Nevada Legislature.

PAGE A-27
Lines 3-5
Disposition of Weapons-Usable Fissile Material
"The NTS has plans for the tritium production facility, which is a transmutation facility. The possibility exists that the facility could be used to process the plutonium into something benign while generating electrical power."

248 ***COMMENT 152*** DOE has issued a Record of Decision (ROD) for tritium productions and the ROD does not include the NTS as a future tritium production site; this statement should not be included in the Final EIS.

PAGE A-27
Lines 18-26
Proposed Tests
"Additional tests proposed under Alternative 3 would include the following: Robotics; Smart Transportation; Smoke Obscuration Operations; Thermal Test Operation Facility; Climatic Test Operation Facility; and Armor/Anti-Armor Tests"

249 ***COMMENT 153*** The reader must assume that these tests would be conducted on the Tonopah Test Range. If this is the case, NEPA compliance should be indicated for those tests that will cause significant environmental impacts.

PAGE A-36
Lines 29-33

Performance Assessments

"Treatability studies conducted on the vitrified waste form [Fernald byproducts vitrified silo wastes] indicated that the vitrified waste fully satisfies NTS waste acceptance criteria and may provide a higher level of long-term protectiveness. Performance assessment analysis will rigorously test various disposal scenarios over a 10,000 year period. The limiting analysis for waste acceptance for disposal is expected to be the inadvertent human intruder dose assessment."

250 ***COMMENT 154***

A copy of the referenced treatability studies are requested via submission of these comments. These studies must also be referenced in the Final EIS. In addition, the definition of "Corrective Action Waste" [line 23] must be provide in the Final EIS, including a discussion of how this waste type is different from waste consider as Special Case Waste, waste classified as Greater-Than-Class-C, or other wastes that are not suitable for shallow land burial.

A review of the text in the EIS suggests that the silo waste from Fernald is not suitable for shallow land burial, as it is long-lived and characterized by high-specific activity. If this is indeed the case, then comments presented earlier concerning the need for DOE to prepare a complex-wide programmatic NEPA assessment of these waste types also apply here. Once again, State officials contend that such an analysis is necessary before any of these waste types are shipped, stored, or disposed of anywhere in the country.

PAGE A-37
Lines 16-18

Closure Operations

"No waste certification facilities would be constructed under this alternative. Waste certification activities required to meet the Waste Isolation Pilot Plant waste acceptance criteria [TRU waste] would not be conducted, and the transuranic mixed waste would be shipped to other DOE sites for certification, handling, and disposal."

251 ***COMMENT 155***

DOE has recently authorized construction of a TRU waste certification building at the NTS, which in essence renders this statement inaccurate; the statement should not be included in the Final EIS.

PAGE A-40
Line 26

Area 5 Radioactive Waste Management Site

"Disposal capability for high-specific activity low-level waste would be expanded."

252 ***COMMENT 156***

The EIS should address whether DOE will define and assess high specific activity low level waste disposal alternatives through a separate programmatic environmental impact statement. As DOE is aware, on March 13, 1995 the agency published a notice in the Federal Register inviting comments concerning the development of strategies to deal with the disposal of high-specific activity low-level waste (i.e., wastes classified as SCW or GTCC). Subsequently, it was stated in DOE's Waste Management PEIS that "Based on the input received [from the Federal Register notice], alternative

STATE GOVERNMENT 2 (CONTINUED)

strategies will be evaluated in a NEPA review once a proposal is developed."[23]

PAGE A-42 **Treatment and Certification Operations**
Lines 26-32

COMMENT 157 Treatment and disposal of the Cotter's concentrate waste is an activity mandated under the Federal Facility Compliance Act (FFCAct). Since DOE recently issued a final Site Treatment Plan (STP) for management of FFCAct waste at the NTS, proposed actions for treatment and disposal of FFCAct waste (i.e., Cotter's concentrates) must be discussed in detail in the Final EIS. Such discussions, moreover, must include the requirements stipulated in the Consent Order issued by the State of Nevada. The State's Consent Order implements the requirements of the NTS/STP as stipulated under the FFCAct. 253

PAGE A-63 **Alternative Energy**
Section A.4.3.1

COMMENT 158 In reference to discussions, alternatives, and analyses for siting a Solar Enterprise Zone in southern Nevada, DOE must clarify the agencies involvement in this activity as it relates to the proposed action in the Final EIS. In addition, if a site for a Solar Enterprise Zone is selected that excludes NTS, then a site-specific NEPA 254 255

[23] U.S. Department of Energy. Draft Waste Management Programmatic Environmental Impact Statement. (DOE/EIS-0200-D). Page 1-17.

STATE GOVERNMENT 2 (CONTINUED)

evaluation of impacts at the selected site should be undertaken separately, and not containing in the Final NTS EIS. If DOE decides to ignore this concern, the agency should demonstrate or explain its legal obligation to proceed otherwise. 255 cont.

APPENDIX C: **Relevant Regulatory Requirements**

COMMENT 159 Appendix C should include DOE's Land and Facilities Use Policy (December 21, 1994), Corporate Facilities Land Use Directive (pending), Life Cycle Asset Management Order (pending), and policies on the Resourceful Reuse and the Ecosystem Based Land Use Initiative programs. 256

Page C-1
Line 18 "Under Alternative 1 [and 3], the DOE would also continue its consultation with the Bureau of Land Management to define the appropriate actions necessary to address administrative issues related to the NTS and other land withdrawals."

COMMENT 160 The EIS fails to provide an explanation of the consultation requirements and issues related to the NTS land withdrawal orders. Accordingly, Appendix C should be amended to include an adequate description of the Bureau of Land Management's review process of pre-FLMPA (Federal Land Management Policy Act) Public Land Orders that established the NTS. Past, present, and future plans for addressing the NTS withdrawal status must be disclosed in the EIS. 257

APPENDIX E **Impact Assessment Methods**

COMMENT 161 Appendix E, Impact Assessment Methods, suffers from a paucity of accepted methods for assessing environmental impacts. Section E.2, Methods and Assumptions of Analysis presents no methods whatsoever, and it is not until page E-12, line 22, that a methodology is first mentioned and cited (Cartwright 1981). The citation on Page E-15, line 27 (ICMA 1982), and Page E-16, line 6 (NFPA 1986) are not impact assessment methods, but rather are planning tools. The citations in Section E.2.5.2, Water Resources, are sound ones for characterizing hydrological resources, but their usefulness for assessing environmental impacts is questionable and has not been established. No analytical methods are presented for Section E.2.7, Air Quality and Climate. These deficiencies should be corrected by using state-of-the-art impact assessment methods. 258

In Section E.2.6, Biological Resources, the approach to assessment presented by Wright and Green (1987) is introduced. This procedure is a conceptual and systematic framework for a comprehensive, interdisciplinary environmental impact assessment for major resource developments. As such, the methodology is meant to identify, analyze, and integrate effects across all components of the environment including air quality, terrestrial ecology, occupational health and safety, and socioeconomic studies. The interdisciplinary nature of the procedure ensures that important relationships and interactions among components of the environment will be identified. To accomplish this, an interaction matrix of environmental components and project actions is constructed. Thus, 259

the purpose of the Wright and Green (1987) procedure is to identify interactions that subsequently must be analyzed. The procedure itself does not embody analytical methods for environmental components and their interactions. Therefore, it is unclear how DOE applied the matrix process to a single valued environmental component, in this case biological resources. That should be explained on Pages E-19 and E-20 of the draft EIS. 259 cont.

Because Appendix E lacks a comprehensive and interdisciplinary methodology like that of Wright and Green (1987), the impact assessment framework for the EIS should be restructured to be consistent with either Wright and Green, or a less dated and more current procedure such as **Jain, R., L. Urban, G. Stacey, and H. Balbach. 1993. *Environmental Assessment*. McGraw-Hill, Inc., New York, 526 pp.** 260

APPENDIX F **Project-Specific Environmental Analysis**

According to the EIS, the expanded use scenario for the Big Explosive Experimental Facility would allow high explosive detonations of quantities ranging from 1 to 70,000 pounds per test. Experiments would expand existing hydrodynamic testing, which include applications of "shape-charge" technology. Use of the assembly facilities in Area 27 is also proposed under both the Continued and Expanded Use alternatives.

COMMENT 162 We question whether the EIS adequately evaluates the potential effects for continued and expanded use of the Big Explosive 261

261 cont.

Experimental Facility and surrounding environs. Moreover, potential environmental impacts and worker safety issues are not analyzed for the assembly facilities in Area 27 . According to recent documentation, these facilities may be inadequate in several important areas.[24] For example, the safety controls may be inadequate since structures may not fully meet current DOE safety guidelines and specifications. In the event of an accidental detonation, explosions at the assembly facilities in Area 27 could propagate from one assembly bay to the another and pose serious safety consequences to persons involved with operations in adjacent bays. CEQ regulations Sec. 1500.1(c) requires an analysis of potential environmental consequences of proposed actions and alternatives, yet the EIS does not provide this analysis for activities at the assembly facilities in Area 27 of the NTS.

262

263

264

Also, while Appendix F addresses the Big Explosives Experimental Facility, it fails to explain the purpose and intent of the analysis. The facility is first mentioned on Page 4-15, line 7 but without cross reference to Appendix F. The first 10 pages of the appendix discuss safety, not environmental analysis. Accordingly, the title of the appendix should be revised to include safety. The appendix does not include environmental analyses of potential effects for the facility and nowhere does it mention the need for air emissions and waste effluent permits. The latter should at least appear on Page F-22, under Regulation, Order, Law. A full explanation of Appendix F,

[24] US Department of Energy, May 1995. *Final Environmental Assessment for Device Assembly Facility Operations*. Nevada Test Site, Nye County, Nevada. pages 10, 11, and 28.

264 cont.

including the status of NEPA compliance for the Big Explosives Experimental Facility should appear both in the appendix itself as well as in Chapter 4, Affected Environments, of the Final EIS. (See Comment 047)

VOLUME 1, APPENDIX H, HUMAN HEALTH RISKS AND SAFETY IMPACTS STUDY

COMMENT 163

265

Appendix H provides a limited approach to estimating human health consequences that largely excludes the role of humans in the environment. On Page 2-1, line 16, the appendix states, "The risk assessment process follows the identified contaminant from its point of origin along various pathways in the environment." On line 19 is the following: "These transport mechanisms (to humans) can be air, water, soil, or food." There is no acknowledgment of the fact that transport of contaminants occurs in ecosystems and that understanding the transport mechanisms requires an ecosystem approach, a science lacking at the NTS, despite Volume 2 of the draft EIS which was prepared by a contractor for the Yucca Mountain Project. This conceptual deficiency is clear in Section 2.1.4, Page 2-8, where only a terse and insufficient one-page discussion is devoted to the topic of environmental pathways. The same deficiency appears in Section 2.2.1, Scenario Development, where the environment is mentioned only with respect to airborne radioactive releases. The whole concept of environmental restoration is ignored as are the native animal and human food chains. Thus, there is nothing stated to assure that the scenarios

265 cont.

tabularized in Chapter 4, Risk Assessment Scenarios by Alternatives, are realistic environmental scenarios. The inclusion of Attachment A, Human Health Risk Scenarios and Equations, does nothing to dispel the doubt, meaning that the findings presented in Chapter 5, Results of the Human Health and Safety Analysis, and the judgements reached in Chapter 6, Conclusions, lack validity and credibility.

266

Care should be taken in the Final EIS to assure that readers can comprehend how the findings and conclusions are logically reached in a credible scientific manner. Chapters 1 and 2 should be grounded in sound approaches to environmental health risk assessment and should, for example, be based on methodologies such as:

(i) Kolluru, R., S. Bartell, R. Pitblado, and S. Stricoff. 1996. ***Risk Assessment and Management Handbook for Environmental, Health, and Safety Professionals***. McGraw-Hill, Inc. New York. 641 pp., and

(ii) Calabrese, E. and L. Baldwin. 1993. ***Performing Ecological Risk Assessments***. Lewis Publishers, Boca Raton, FL.

VOLUME 2, FRAMEWORK FOR RESOURCE MANAGEMENT PLAN

1.0 INTRODUCTION

PAGE 1-1 **Purpose**

267 ***COMMENT 164*** This section explains the purpose and rationale for having a Resource Management Plan (RMP) for the NTS included in the EIS. This should be reflected in the EIS Summary and in Chapter 1, Volume 1, as noted in the comments on those portions of the EIS.

268 *DOE should also commit to including an implementation schedule for the RMP in the EIS ROD.*

PAGE 1-2 Line 11 **Policy and Procedures**

269 ***COMMENT 165*** Section 1.3 notes the limitations of DOE Order 4320.1B, Site Development Planning, with respect to defining a system for managing the resources of a site. Reference is made to DOE's Land and Facility Use Policy, December 21, 1994, as a remedy for this shortcoming. This should be elaborated on by citing and discussing the pending Corporate Facilities Land Use Directing Order and the Life Cycle Asset Management Order. Likewise, mention should be made of the DOE Future Use Program initiative, the report, "Resourceful Reuse," and the role that the RMP for NTS will play in that regard. Quoting from the Land and Facility Management Policy

as is done below line 20 should be repeated in Chapter 2, Volume 1 of the EIS.

269 cont

Section 1.3 should be strengthened by including a discussion of a sustainable environment while also sustaining economies, i.e., sustainable development. Sustainable development is implied in the Land and Facility Use Policy and DOE is fostering that concept with the RMP. The NTS RESOURCE MANAGEMENT PLAN GOAL between lines 10 and 11 on Page 1-3 is a laudable statement to which the remainder of Volume 2 adheres.

PAGE 1-4
Line 17

Policy and Procedures

270 ***COMMENT 166*** It is refreshing to see the Yucca Mountain Project and the memorandum of agreement between DOE/NV and the project acknowledged. This should be elaborated on in Volume 1 of the EIS.

PAGE 1-5

Relationship to the Nevada Test Site Environmental Impact Statement

271 ***COMMENT 167*** Section 1.4 is a commendable strategy that should also appear in Volume 1 of the EIS.

PAGE 1-6

Relation to Other Agency Resource Management Plans

272 ***COMMENT 168*** Section 1.5 fails to carry through with the conceptual purpose and rationale for the RMP (See Comments 001 and 010). The Land and Facility Use Policy of December 21, 1994 shifts DOE's traditional policy toward one of stewardship for both man-made resources and natural resources. The discussion in this section should acknowledge that and expound on the links between a developed environment on the one hand and undeveloped natural resources and ecosystems on the other hand, as is done on Page 2-1 under Step 1 and Step 2.

2.0 DEVELOPMENT OF THE RESOURCE MANAGEMENT PLAN

PAGE 2-3
Line 20

Step 3

273 ***COMMENT 169*** The sentence beginning on this line is an example of the lack of logic in DOE's policy of excluding the Yucca Mountain Project from the NTS EIS and the RMP. Here the Yucca Mountain Project, by association, is given the status of a cooperating federal agency for the NEPA process in the EIS. The project simply is incongruous with the government agencies it is associated with under Step 3. This should be set straight in the final issue of Volume 2.

3.0 ECOSYSTEM MANAGEMENT

PAGE 3-2 **What is Ecosystem Management?**
Line 12

274 ***COMMENT 170*** The sentence beginning here recognizes desired natural resources, including undisturbed land. This acknowledgment conflicts with Section 1.5 of Volume 2 which attempts to separate DOE's interest in NTS from natural resources. Clearly, undisturbed land, air, and water resources at NTS are in DOE's interests with respect to uses of the site by future generations, especially for land that could require 800-1000 years to recover from surface disturbances. This should be recognized in Section 1.5.

PAGE 3-4 **Knowledge of Ecosystems on the Nevada Test Site**
Line 20

275 ***COMMENT 171*** The sentence beginning on this line is another acknowledgment of the relevance of the Yucca Mountain Project to the NTS. Included here also should be the project's information on soil disturbance and reclamation. Especially relevant is "Secondary Succession on Disturbed Sites at Yucca Mountain, Nevada," EGG 11265-1118, December 1994. This report discusses the implications of information on site disturbances to restoration of disturbed land. As noted in the preceding comment, undisturbed land is a resource at NTS that should be valued by the DOE for future generations. If it is impractical to reclaim disturbed land on NTS in under 800-1000

275 cont. years, then a prudent ecosystem management policy for the RMP to consider is that of minimizing surface disturbances at the site.

PAGE 3-5 **Surrounding Land**
Line 16

276 ***COMMENT 172*** Section 3.2.3 relates to Step 3, page 2-3, for implementing ecosystem management. Ecosystem management occurs at the landscape level. In the NTS region, this will involve the agencies mentioned in Section 3.2.3. For that reason, the discussion should acknowledge and cite the ecosystem management policies of the other agencies with which DOE must coordinate and be consistent. In this respect, the Bureau of Land Management is especially relevant because it manages natural resources on the Nellis Air Force Range, as well as on public lands around NTS and Nellis. Coordination with BLM's rangeland ecosystem health program under 43 CFR Subpart 4180 is of paramount importance and should be acknowledged in Section 3.2.3 of Volume 2 of the draft EIS.

PAGE 3-6 **Principles of Ecosystem Management**
Line 17

277 ***COMMENT 173*** Because of the importance of BLM's rangeland ecosystem management policies, Section 3.3 should incorporate the concept of rangeland ecosystem health being governed by the soil-water-biota relationships within ecosystems and landscapes. This fundamental association was established by the National Resource Council's report on ***Rangeland Health*** (1994) and was adopted by BLM for

277 cont.

Range Reform '94. Both documents should be mentioned in Section 3.3. The concept of the health of ecosystems like those of the NTS and surrounding areas being tied to soil-water-biota interactions also speaks to the importance of minimizing site disturbances as a means of conserving undisturbed land for future generations.

PAGE 3-8 **Improve Communications and Cooperation with**
Line 21 **Interested and Affected Parties**

278 ***COMMENT 174*** There should be a reference provided for the Five-Party Cooperative Agreement. The status of the initial 1977 agreement with respect to the May 24, 1994, proposed revision should be summarized.

4.0 DRAFT RESOURCE MANAGEMENT GOALS

PAGE 4-1 **Draft Resource Management Goals**

279 ***COMMENT 175*** Chapter 4 should embrace the concept of rangeland ecosystem health being governed by the soil-water-biota relationships within ecosystems and landscapes. (See Comment 173)

PAGE 4-8 **Socioeconomics**
Line 18

280 ***COMMENT 176*** Section 4.11 should acknowledge the concept of sustainable development achieved through ecosystem management as set forth by the Report of the Interagency Ecosystem Management Task Force, Volume I, Overview, June 1995. Volume 2 of the Final EIS

280 should also reflect the task force's Volume II-Implementation Issues, November 1995. If Volume III-Case Studies of the task force report is issued soon, as anticipated, it too should be cited and reflected in Volume 2 of the Final EIS for the NTS.

APPENDIX 1
OTHER STATE AGENCY COMMENTS

BOB MILLER
Governor

STATE OF NEVADA

PETER G. MORROS
Director

R. MICHAEL TURNIPSEED, P.E.
State Engineer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
Capitol Complex
123 W. Nye Lane
Carson City, Nevada 89710
(702) 687-4380 • Fax (702) 687-6972
May 2, 1996

Nevada State Clearinghouse
Dept of Administration
Planning Division
Blasdel Bldg Room 202
Carson City NV 89710

RE: Nevada SAI# 96300110, Due Date: MAY 3, 1996

Dear Gentlemen,

Nevada Revised Statutes (NRS) chapters 533 and 534 require that a permit be gained prior to diversion or use of the public waters of the State of Nevada. NRS Chapters 535 requires notification of the State Engineer prior to building, altering or reconstructing a dam and, under certain circumstances, requires that a dam safety permit be acquired prior to starting construction. This office has not been pursuing compliance with these portions of the NRS on the Nevada Test Site (NTS) due to the presumption that the formation of the federal reservation included sufficient water to support the primary purpose of the reservation and that all hydraulic facilities constructed would be under the direction of the USA Corps of Engineers.

Regulation and allocation of the scant water reserves in this area of the state are difficult, especially in the light of groundwater movement through and out of the NTS, without an awareness of how much water the NTS has appropriated, has firm plans to appropriate, or decides to appropriate in the future. Compliance with Nevada's water appropriation permitting laws and regulations will provide this office with the necessary information and need not compromise national security or the NTS mission.

NAI # 96300110
page 2

281 Alteration of the missions of the NTS to broaden the scope of activity is not seen as the primary purpose for which the NTS was originally set aside. Applications for appropriation of the public waters of the State of Nevada must be made for any activities utilizing water on the NTS or related off-site locations that are not directly related to the original purposes for which the reservation was made. This specifically and emphatically includes the so-called Solar Enterprise Zone.

Sincerely,

Michael J. Anderson, P.E.
Hydraulic Engineer III

MJA/tdf

APPENDIX 2
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STATE GOVERNMENT 3

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1263 S. Stewart Street
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BOB MILLER, Governor

May 13, 1996

TOM STEPHENS, P.E., Director

In Reply Refer to:

Dr. Donald R. Elle, Director
Environmental Protection Division
DOE/NV
P.O. Box 14459
Las Vegas, NV 89114

PSD 2.11

Dear Dr. Elle:

The following comments are offered in response to the publication by the DOE of the Draft "EIS for the NTS and Off-site Locations in the State of Nevada"

1 1. DOE must specify shipment notification procedures, including (1) state, tribal and local jurisdiction notification, (2) estimates of materials and volumes to be shipped, and (3) designations of points of contact for corridor jurisdictions.

2 The ROD should incorporate a shipment schedule identifying the generator(s), type of material and number of shipments of LLRM and LLRW expected to be received at the NTS LLW facility.

3 2. There should be regular meetings among representatives of DOE, corridor jurisdictions and other stakeholders and interested entities. These meetings should be used to:

a. provide updates regarding ongoing and planned shipment campaigns and reports and evaluations on past shipments (based on DOE monitoring program);

b. address issues that may arise when significant changes have occurred or are planned for the transportation system and in materials and/or volumes being shipped; and

c. identify and mitigate additional impact or concerns of local communities should transportation problems occur.

4 3. The DOE should commit to hosting and working with a group of state and local jurisdictions regarding route selection and selection of safer parking areas.

5 a. DOE and stakeholders should agree on a methodology for how routes utilized by carriers are selected. Under this option, DOE must commit in the Record of

STATE GOVERNMENT 3 (CONTINUED)

cont.

Decision to a clearly-articulated process for routing of LLW shipments and to a mechanism that binds the shipper to adhering to the identified routing alternative, source and consistency of data used by the various carriers, with DOE acting as the data repository.

b. The DOE should provide state and local jurisdictions with copies of the route and risk analyses for each carrier transporting Class 7 materials as defined in 49 CFR 174.403.

c. DOE/NV should work with the State and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carrier vehicles.

4. Interim information can be made available though postings to an Internet home page, or through other electronic, hard copy or oral communication. In addition, DOE should also provide:

a. a mechanism for receiving and addressing concerns that may arise between regular meetings; and

b. annual reports to include, at the minimum, identification of carriers, sources and destinations of each shipment, the number and volume of shipments of each substance, highway and rail routes used, incidents/accident encountered and actions taken to address them, and evaluations of each shipment campaign.

5. The NTS EIS should address how other DOE facility EISs will be incorporated into the NTS EIS and Program Implementation Plan. Reiterates the overall need for a Programmatic EIS (PEIS).

6. The ROD should address the following specific emergency response issues:

a. DOE must ensure that local emergency responses agencies are able to identify low level waste shipments and provide immediate notification to federal and state agencies responsible for responding to or supporting the handling of accidents;

b. DOE/NV should provide responding jurisdictions/agencies with at least two new detection instruments per jurisdiction and ongoing calibration services in conjunction with local training in corridor communities in emergency response to incidents involving radioactive materials;

c. DOE/NV should provide or facilitate the provision of in-vehicle radio repeaters,

STATE GOVERNMENT 3 (CONTINUED)

cont.

binoculars, cellular telephones and other equipment to corridor jurisdictions. DOE should provide preference to local public safety and emergency response agencies for the free distribution of federal surplus emergency response equipment;

d. DOE/NV should work with corridor communities to make training opportunities as effective as possible. Consideration should be given to direct funding of training programs to the corridor communities, providing training opportunities on weekends to accommodate volunteer responders, and providing stipends to participants;

e. Communities which are not directly located on transportation routes should be provided the opportunity to participate in emergency response training courses offered to corridor communities;

f. DOE should provide financial and technical assistance as necessary to ensure that corridor communities have up-to-date emergency management and evacuation plans in place.

7. Carriers and shippers should ensure that the following list of operational procedures are followed for all shipments:

a. Transported loads should be covered or contained to prevent possible aerosol disbursement;

b. All shipments of low level waste arriving at NTS during off-hours should be directed to temporarily park loads at a secured area inside NTS gates;

c. Each truck carrying Class 7 materials should have two drivers present at all times;

d. Carriers should respond to all driver advisories and notifications of delays and make appropriate adjustments to primary routes; and

Dr. Donald Elle
May 13, 1996
Page 4

22 c. All vehicles should be required to undergo quarterly CVSA inspections (based on enhanced North American standard) and should display appropriate safety inspection stickers.

Sincerely,

Thomas J. Fronapfel

Thomas J. Fronapfel, P.E.
Assistant Director - Planning

TJF:DKM:dg

cc: Joe Strolin, NWPO

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MUNICIPAL GOVERNMENT 1

Lander County Commission

315 South Humboldt • Battle Mountain, NV 89820 • 702 635 2885 • Fax 702 635 5332

April 26, 1996

Dr. Donald R. Elle
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, Nevada 89114

Dear Dr. Elle:

Lander County appreciates the opportunity to review and provide comments to the Draft Environmental Impact Statement for the Nevada Test site and Off-site Locations in the State of Nevada.

The numerous volumes of the draft environmental impact statement (EIS) would suggest that the Department of Energy (DOE) has put forth considerable effort to address important issues. DOE must be commended for their efforts to cooperate with interested parties through participation at public hearings, the Transportation Protocol Working Group, and several presentations to the Affected Units of Local Government.

Enclosed are numerous specific comments related to the procedural aspects of the National Environmental Policy Act (NEPA) and the overall content and analysis presented in the document. Our review has identified several potential issues which require your consideration. Most notably is the lack of a well defined proposed action. The purpose and need for the proposed action is not clearly stated and is confusing. 1

The alternatives in this document are alternative proposals and not alternatives to the proposed action. The relationship between this EIS and the resource management plan is not clear. The EIS refers to the alternatives as "resource management alternatives" yet the resource management plan will not be completed for several years. Furthermore, the alternatives described in the document have little or nothing to do with resource management, but instead describe potential uses of facilities and new programs which may be housed at NTS. 2 3 4

We question whether alternative 2 is a valid alternative. Alternative 1 (No action) is the baseline conditions yet there is an impact analysis for this alternative. The Department of Energy needs to reconsider the alternatives in this document. 5

The overall impact analysis is simply a description of the program or activity with some qualitative statements about generic impacts. Effects from past weapons testing are ignored in the baseline description and the impact analysis, particularly the cumulative impact analysis. 6 7

The transportation impact analysis does not consider the more intangible aspect of waste shipments such as those related to socioeconomics, land use issues, and risk perception. The New Mexico lawsuit exemplifies the need to give more consideration to these issues. It appears that linkages among resource impacts are not well established. 8

The cumulative analysis is inadequate and does not consider all past, present and reasonably foreseeable actions. The cumulative analysis all but ignores impacts from past weapons testing and makes no mention of the Yucca Mountain Site. Furthermore, the analysis ignores activities on the Nellis Range and Tonopah Test Range. Instead the analysis attempts to compare impacts from NTS operation to growth impacts in Las Vegas Valley. It is not the intent of a cumulative analysis to draw such a comparison. The analysis consists primarily of qualitative statements and lacks quantitative assessment of impacts. 9 10 11

As part of our comments we have attached hereto and incorporated by reference recommendations regarding the NTS EIS compiled by the Transportation Protocol Working Group. The County participated in the development of these recommendations. We would ask that these comments be included in the proposed action and subsequent record of decision.

We hope the enclosed comments will assist the Department of Energy in the preparation of this environmental document. If there are any questions concerning these comments, please do not hesitate to call me.

Sincerely,

Heather Smith Eates, Chair
Lander County Commission

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White Pine County
Board of County Commissioners

April 26, 1996

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U.S. Department of Energy
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RE: White Pine County
Comments on the Nevada Test
Site Draft Environmental
Impact Statement

Dear Mr. Elle,

White Pine County is submitting for Department of Energy consideration the attached comments on the Nevada Test Site Environmental Impact Statement (EIS). The Board of White Pine County Commissioners encourages the Department to thoroughly consider all of the attached comments on the Nevada Test Site Draft Environmental Impact Statement.

The Department is requested to employ a policy of adopting most of the issues which the county has raised. Inclusive treatment of county issues will help to ensure that the Nevada Test Site (NTS) Draft EIS adequately addresses potential risks which may accrue to White Pine County.

I trust that the attached comments on the NTS Draft EIS will assist DOE in determining the final NTS EIS. Please feel free to contact Mr. Ferd Mariani of the W.P. County Nuclear Waste Project Office at (702) 289-2033 if should you have any questions regarding the issues raised in this document.

Sincerely,

BOARD OF COUNTY COMMISSIONERS

Wayne Cameron,
Chairman

Enclosure as indicated.

WC/dm

WHITE PINE COUNTY COMMENTS
NEVADA TEST SITE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

White Pine County's concerns with the NTS EIS can generally be described as focusing upon the cumulative exposure risks associated with past, present, and future activities at the NTS and transportation initiatives required to move low level radio active waste (LLRW) through White Pine County to the NTS.

The DOE Draft Environmental Impact Statement shows that the NTS may be used to dispose of extensive volumes of LLRW generated at defense sites around the United States. Certain of these studies, such as the Fernald Site EIS have suggested the desirability of shipping these materials by rail to the envirocare facility in Utah and possibly by truck to the Nevada Test Site. Although the Draft EIS for the Nevada Test Site has ranked Nevada 3, Route 5 as a high risk route, it is still an option which remains open for shipment of LLRW to the NTS.

Although the NTS EIS does not show I-80 as a route to be used for shipping LLRW, this interstate also remains an option.

There has been a great deal of concern expressed by Clark County about LLRW shipments through the "Spaghetti Bowl" and across Boulder Dam. Also, in written and oral comments by the City of Las Vegas expressing concern about the Las Vegas valley economy and Craig Road. It has become evident that interest of the State of Nevada and Clark County to minimize risks to health and safety of a majority of nevada's residents and economy of Southern Nevada will likely shift said risks to residents and businesses in rural counties, such as White Pine.

It is White Pine County's concern that if there is a reassessment of route selection methodology, Nevada 3 ,Route 5 might become a primary route.

If, in the Final Draft EIS this should be the case, then U.S. highway 93 and 6 and State Highway 318 through White Pine County might be designated for both LLRW and High Level Radioactive Waste shipments since this route is now a proposed route for HLW shipments.

White Pine County offers the following comments and recommendations:

The NTS EIS must consider alternatives for provision of effective emergency first response capabilities along legal weight truck routes in White Pine County.

MUNICIPAL GOVERNMENT 2 (CONTINUED)

White Pine County Comments
Page 2

A county sponsored assessment of existing response capabilities and possible constraints to effective emergency management, has revealed a general lack of preparedness to respond to accidents involving radioactive constituents.

2 Alternatives which should be investigated include enhanced local government response capabilities. Provision of specialized equipment to deal with an incident is primary. The EIS should address the risk management implications of alternatives strategies for when and how provision of local training and equipping of local first responders might occur.

The following recommendations are offered for your consideration:

3 1. DOE must specify shipment notification procedures, including (1) state, tribal and local jurisdiction notification, (2) estimates of materials and volumes to be shipped, and (3) designations of points of contact for corridor jurisdictions.

4 II. There should be regular meetings among representatives of DOE, corridor jurisdictions and other stakeholders and interested entities. These meetings should be used to:

a. provide updates regarding ongoing and planned shipment campaigns and reports and evaluations on past shipments (based on DOE monitoring program);
b. address issues that may arise when significant changes have occurred or are planned for the transportation system and in materials and/or volumes being shipped;
c. identify and mitigate additional impact or concerns of local communities should transportation problems occur.

Interim information can be made available through postings to an Internet home page, or through other electronic, hard copy or oral communication. In addition, DOE should also provide:

5 1. a mechanism for receiving and addressing concerns that may arise between regular meetings, and;
2. annual reports to include, at the minimum, identification of carriers, sources and destinations of each shipment, the number and volume of shipments of each substance, highway and rail routes used, incident/accident encountered and actions taken to address them, and evaluations of each shipment campaign.

MUNICIPAL GOVERNMENT 2 (CONTINUED)

White Pine County Comments
Page 3

6 III. DOE must ensure that local emergency response agencies are able to identify low level waste shipments and provide immediate notification to federal and state agencies responsible for responding to or supporting the handling of accidents.

7 IV. DOE/NV should provide responding jurisdictions/agencies with at least two new detection instruments per jurisdiction and ongoing calibration services in conjunction with local training in corridor communities in emergency response to incidents involving radioactive materials.

8 V. DOE/NV should provide or facilitate the provision of in-vehicle radio repeaters, binoculars, cellular telephones and other equipment to corridor jurisdictions.

9 VI. DOE should provide preference to local public safety and emergency response agencies for the free distribution of federal surplus emergency response equipment.

10 VII. DOE/NV should work with corridor communities to make training opportunities as effective as possible. Consideration should be given to direct funding of training programs to the corridor communities, providing training opportunities on weekends to accommodate volunteer responders, and providing stipends to participants.

11 VIII. Communities which are not directly located on transportation routes should be provided the opportunity to participate in emergency response training courses offered to corridor communities.

12 IX. DOE should provide financial and technical assistance as necessary to ensure that corridor communities have up-to-date emergency management and evacuation plans in place.

13 X. Transported loads should be covered or contained to prevent possible aerosol disbursement.

14 XI. All shipments of all materials arising at NTS during off-hours should be required to temporarily park loads at a secured area inside NTS gates.

15 XI. Each truck carrying Class 7 materials should have two drivers present at all times.

16 XII. Carriers should respond to all driver advisories and notifications of delays and make appropriate adjustments to primary routes.

MUNICIPAL GOVERNMENT 2 (CONTINUED)

White Pine County Comments
Page 4

17 XIII. All vehicles should be required to undergo quarterly CVSA inspections (based on enhanced North American standard) and should display appropriate safety inspection stickers.

18 XIV. DOE/NV should work with the State and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carrier vehicles. This is related to the recommendation in the Mitigation, Procedures, and Operations, that all shipments of low level waste arriving at NTS during off-hours be required to temporarily park loads at a secured area inside NTS gates.

MUNICIPAL GOVERNMENT 3

Mayor
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May 2, 1996

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Post Office Box 14459
Las Vegas, Nevada 89114

RE: Nevada Test Site - Draft Environmental Impact Statement

Dear Dr. Elle:

Thank you for the opportunity to review and comment on the draft Environmental Impact Statement (EIS) for the Nevada Test Site and Off-site Locations in the State of Nevada. We especially appreciated the opportunity to make public comments at the April 11, 1996, meeting at the Department of Energy (DOE) facility in North Las Vegas. The DOE is to be commended for its efforts in actively soliciting and responding to concerns raised throughout the study period.

The following comments are organized into three groups: Group 1 - General Comments; Group 2 - Comments on Volume 1, Parts A and B; and Group 3 - Comments on Appendix I, Transportation Study.

General Comments

1 1. The area covered by the EIS did not sufficiently address concerns in North Las Vegas or the Las Vegas Valley. Health risks to the workers, the potential requirements for increased services and a generalized description of effects on the transportation system were given. Missing was any analysis of the effect an accident or incident would have on our primary industry, tourism. While the chances of a transportation related incident may be small, any incident involving a shipment destined for the Nevada Test Site carries the possibility of being attributed to Las Vegas.

MUNICIPAL GOVERNMENT 3 (CONTINUED)

2. The City has always maintained their first responsibiley is to provide the highest level of safety for our residents, workers, and drivers. In this respect, we feel it is important to coordinate the test site activities with the Yucca Mountain Project since there is a strong possibility that high-level and low level nuclear waste will use the same transportation corridors.

3. The City has on several occasions expressed to DOE their opposition to transporting any nuclear wastes on Craig Road, and our position has not changed. A hazards assessment of Craig Road and the Union Pacific Railroad was completed in 1995 by Russell Di Bertolo, Ph.D., funded by the State of Nevada Nuclear Waste Project Office grant. This assessment includes a comparison of development for one mile on either side of Craig Road in 1989 to development in 1995. This study confirms the City's position that the Craig Road area residential development makes it unsuitable as a nuclear waste transportation route.

4. Although it is not required under current U.S. Department of Transportation regulations, the DOE should become more proactive in route selection, especially in the Las Vegas area. It should be possible to develop a route selection methodology based on a comparative analysis that takes into account our local concerns and conditions including population, potential risk for accidents and various other criteria. The present process of considering mainly time and distance is not adequate. Low-level waste transport is too closely allied with high-level waste transport to be dismissed until the Yucca Mountain EIS is completed. Any routes used for low-level waste transportation will assuredly be used for high-level waste.

5. The economy of the Las Vegas Valley depends on perceptions. The valley's primary industry and Nevada's primary source of income is tourism. The DOE may have an excellent record in transporting nuclear waste, but a negative perception caused by such shipments could result in economic damage to the entire state of Nevada. Route selection methodology must be explicit, transferable to both high-level and low level nuclear waste transportation, and account for local concerns and conditions.

6. In the event of an incident involving nuclear waste materials, the DOE must be ready to respond quickly and appropriately. To this end, the EIS should include a recommendation to maintain the radiation assessment team at the Nevada Test Site.

7. Regular meetings should be scheduled with DOE, carriers and affected units of government to discuss nuclear waste transportation issues.

8. DOE should notify local governments indicating the number of shipments, type, route, time of day and days of week.

Volume I, Parts A and B

9. (Volume I, Part A, p. 4-66) North Las Vegas Air Terminal is not a private airport. Owned and operated by the Clark County Department of Aviation, it is the second busiest airport in the state. Boulder City airport is owned by the City of Boulder City. Henderson Sky Harbor Airport is being bought by Clark County.

MUNICIPAL GOVERNMENT 3 (CONTINUED)

10. (Section 4.7.2.4) Dry Lake Valley is referred to in the section on the Coyote Spring Valley.

11. (Section 5.2.1.3) A total population decrease of 1,700 is related to Alternative 2 (Discontinue Operations). Of the total estimated population decrease of 1,700, how many would come from North Las Vegas? Estimates are given for other measures, but not for the population.

12. (Section 5.3.6.6.2) It is not clear whether the Off-Site Traffic estimates for I-15 south of Lamb Boulevard include the new race track (Las Vegas Motor Speedway), which is expected to have a significant impact on I-15.

13. (Section 5.4.6.6.2) US 95 is not near the Dry Lake Valley site.

14. Throughout Volume I, there is a roadway segment described as "US 95 south of Jones Road (North Las Vegas Terminal)". What is the North Las Vegas Terminal?

15. The 1995 population for North Las Vegas should be 77,820, not 72,796.

16. The housing counts in the EIS are low. By the end of 1997, the 29,667 units projected for the year 2000 will have already been reached. The annual housing unit counts and projections for 1991 to 2000 should be as shown in the following table.

Year	Number of Housing Units
1991	17,360
1992	19,104
1993	21,226
1994	23,226
1995	25,836
1996	28,931
1997	31,986
1998	35,041
2000	38,096

17. (Page 5-110) The EIS forecasts show slow growth in population, personal income, and employment in North Las Vegas. There is no evidence to suggest that the substantial increases in population and employment that North Las Vegas has experienced since 1990 will suddenly end.

18. The EIS states that the cumulative impact of in- and out-migration associated with Nevada Test Site activities would contribute only negligibly to regional socioeconomic effects. Da

MUNICIPAL GOVERNMENT 3 (CONTINUED)

18 cont. a regional basis this may be correct. As a higher percentage of the North Las Vegas population consists of NTS employees than probably any other Clark County jurisdiction, Alternative 2 would have a greater impact on North Las Vegas than on the region as a whole.

Volume I, Appendix I - Transportation Study

19 19. (p. ES-3) We appreciate the fact that the Department of Energy recognizes the importance of reducing risk in the transportation system by selecting the route from a given generator site. Of equal importance is reducing the risk where the shipments will concentrate, most likely the Las Vegas Valley.

20 20. (P. 3-24) WE Are opposed to using NV-2, Eastern Route 8, down Craig Road. Craig Road serves primarily residential areas, except for the section near I-15. There was one signal on Craig Road between I-15 and Decatur in 1993. Since then four signals have been put into operation, three signals are under construction, and one signal is under design.

Again, thank you for the opportunity to comment on the draft EIS.

Sincerely,

Theron H. Goynes
Mayor Pro Tempore

CF

cc: Dennis Bechtel, Clark County
Charity Fechter
Nancy McNeill

MUNICIPAL GOVERNMENT 4

County of Inyo
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May 3, 1996

Donald R. Ellis, Director
Environmental Protection Division
U.S. Department of Energy
P. O. Box 14459
Las Vegas, NV 89114

FAXED 5-3-96

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada (DEIS-NTS). Historically, Inyo County has had to search for opportunities to become involved in the review of activities in and around the Nevada Test Site (NTS). Unfortunately, most documents prepared for federal activities in this area seem to use the California-Nevada border as a line of demarcation between areas of impact.

In many ways this is true of the DEIS-NTS. In the development of the Transportation Study (Appendix I), Inyo County has had an opportunity to comment, and has used that to expand the emphasis from strictly an in state study to a more regional approach. However, other areas of the document still make the assumption that impacts need only be considered up to the state border. For example, the document makes the statement that "groundwater is an important resource in Nevada"[1]. This is also true of Inyo County and much of the west. In fact, one of the two regional groundwater systems that underlie the Nevada Test Site ultimately discharges in Inyo County (Death Valley)[2]. But the map referred to in the discussion of this groundwater system (Figure 4-30) does not show the California portion of the system.

Our comments to this document generally fall into two categories: transportation related, and, groundwater related.

Transportation

Alternatives for the continued or expanded use of the Nevada Test Site (NTS) will increase transportation needs. Especially waste management options, which include the potential shipment for disposal of vast, uncertain amounts of low-level and/or mixed wastes from across the nation. Two-way shipments of materials (such as transuranics) for storage at the NTS is likely also to occur. The analysis of transportation risks included in the Transportation Study (Appendix I),

[1] Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, January 1996, Volume I, Chapter 5, page 5-17, line 2.
[2] Ibid., Volume I, Chapter 4, page 4-241, line 10.

MUNICIPAL GOVERNMENT 4 (CONTINUED)

generally treats these shipments as if they consisted of regular hazardous materials. Although the radiation risk is calculated and described, there is no specific consideration of the realities that have made transportation such an important issue to state and local governments and citizen groups. The reality is: the public considers radioactive materials to be different than other hazardous materials. All scientific risk assessments aside, the public considers the transportation of radioactive materials to be more dangerous — riskier — than the transportation of other hazardous materials. This reality was the driving force behind the involvement of the parties in the Transportation Protocol Working Group, and forms the rationale for the recommendations made by that group. Without an understanding of this real-world condition the Department of Energy may discount these recommendations, creating long term difficulties for their programs.

1. DOE must specify shipment notification procedures, including [1] state, tribal and local jurisdiction notification, [2] estimates of materials and volumes to be shipped, and, [3] designations of points of contact for corridor jurisdictions.

1 Because of the sensitivity of local citizenry to the transportation of radioactive materials through their community, local decision makers need shipping campaign information prior to the beginning of the shipments. Without information to respond to citizen inquiries, local officials will be placed in a reactive, rather than responsive, mode.

2. There should be regular meetings among representatives of DOE, corridor jurisdictions and other stakeholders and interested entities. These meetings should be used to:

   a. provide updates regarding ongoing and planned shipment campaigns and reports and evaluations on past shipments [based on DOE monitoring program];
   b. address issues that may arise when significant changes have occurred or are planned for the transportation system and in materials and/or volumes being shipped;
   c. identify and mitigate additional impact or concerns of local communities should transportation problems occur.

2 Interim information can be made available through postings to an Internet home page, or though other electronic, hard copy or oral communication. In addition, DOE should also provide:

- a mechanism for receiving and addressing concerns that may arise between regular meetings; and,
- annual reports to include, at the minimum, identification of carriers, sources and destinations of each shipment, the number and volume of shipments of each substance, highway and rail routes used, incidents/accident encountered and actions taken to address them, and evaluations of each shipment campaign.

The key is **two-way communication**. If local government officials are aware of the Department of Energy's transportation plans, and have been able to voice their concerns and have them addressed, there is less chance of confrontation over transportation issues.

MUNICIPAL GOVERNMENT 4 (CONTINUED)

3. DOE must ensure that local emergency response agencies are able to identify low level waste shipments and provide immediate notification to federal and state agencies responsible for responding to or supporting the handling of accidents.

3 In general, emergency responders are not likely to respond to incidents involving radioactive materials as often as they will to other types of hazardous materials such as gasoline. Every effort should be made to make responders familiar with low level radioactive shipment characteristics, and to provide communications channels to agencies with specific expertise in dealing with response and recovery operations involving these materials.

4. DOE/NV should provide responding jurisdictions/agencies with at least two new detection instruments per jurisdiction and ongoing calibration services in conjunction with local training in corridor communities in emergency response to incidents involving radioactive materials.

4 The current national trend toward the reduction of federal and state support to local activities has resulted in the prioritizing of emergency management support activities. In many way this is a direct result of the safety record of radioactive shipments [see the discussion of "atrophy of vigilance" in Dr. Freudenburg's paper[1]). This means, however, that emergency responders are unlikely to be properly prepared without extra-ordinary effort from the Department of Energy. At a minimum this should include providing detection devices, calibration services, and training on the operation of the device and in response to a radiological incident.

5. DOE/NV should provide or facilitate the provision of handheld radios, in-vehicle radio repeaters, binoculars, cellular telephones and other equipment to corridor jurisdictions.

6. DOE should provide preference to local public safety and emergency response agencies for the free distribution of federal surplus emergency response equipment.

5 Especially for rural responders, having the proper equipment and the ability to communicate with the rest of the world is essential. Every step the Department of Energy takes in that direction will have a mitigating effect on any incident.

7. DOE/NV should work with corridor communities to make training opportunities as effective as possible. Consideration should be given to direct funding of training programs to the corridor communities, providing training opportunities on weekends to accommodate volunteer responders, and providing stipends to participants.

6 8. Communities which are not directly located on transportation routes should be provided the opportunity to participate in emergency response training courses offered to corridor communities.

[1] "Nothing Recedes Like Success? Risk Analysis and the Organizational Amplification of Risks," *Risk Issues in Health & Safety*, Winter 1992, Volume 3, Number 1 pages 19-38.

MUNICIPAL GOVERNMENT 4 (CONTINUED)

9 DOE should provide financial and technical assistance as necessary to ensure that corridor communities have up-to-date emergency management and evacuation plans in place.

7 Responders that are properly trained, and communities that are prepared, are less likely to over react to a radiological incident. Therefor it is in the Department of Energy's best interests to provide sufficient training and support.

10 Transported loads should be covered or contained to prevent possible aerosol disbursement.

11. All shipments of low level waste arriving at NTS during off-hours should be required to temporarily park loads at a secured area inside NTS gates.

12. Each truck carrying Class 7 materials should have two drivers present at all times.

8 13. Carriers should respond to all driver advisories and notifications of delays and make appropriate adjustments to primary routes.

14. All vehicles should be required to undergo quarterly Commercial Vehicle Safety Alliance inspections [based on enhanced North American standard] and should display appropriate safety inspection stickers.

The Department of Energy should consider logistic considerations that will reduce the level of concern felt by the public, state, and local officials. Comments 10-14 all relate to the types of logistic considerations that the Department of Energy should entertain.

15. DOE/NV should work with the State and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carrier vehicles.

9 Due to the heightened public concern regarding radioactive materials, there should be areas designated for parking, should weather, roadway, or mechanical delays require vehicle down time. The Department of Energy should attempt to avoid the situation where local elected officials receive phone calls from their constituents asking why a truck carrying radioactive waste has been parked near the local elementary school all day. Sensitivity to these sorts of issues will help reduce the friction between levels of government, and help make shipping campaigns uneventful.

Hydrology

1 The Environmental Impact Statement (EIS) should include an explicit discussion of plans for restoration of areas contaminated by underground nuclear testing, or the plans to monitor for groundwater contamination at such sites in the future.

10 Past, present, and future activities at the Nevada Test Site (NTS) can potentially cause adverse environmental impacts to the groundwater at the NTS. Particularly in the area of underground nuclear testing the potential is great for contamination of the underlying ground water (either

MUNICIPAL GOVERNMENT 4 (CONTINUED)

10 (cont.) directly through tests in or near the saturated zone, or indirectly through transport of radionuclides through the vadose zone to the saturated zone over time). The discussion of environmental restoration activities apparently redefines "completion" to mean the placement of monitoring devices in wells[4]. The DEIS is silent on the length of time monitoring should continue, given the implied decision to leave all underground nuclear testing byproducts in place.

2. The descriptions and depiction of the hydrogeologic basins in the EIS must be extended to include all of the basin(s), including the discharge points in Death Valley.

11 The description of the hydrogeologic basins in the report[5] is unclear, as it refers to a figure (4-39) that does not extend into California to show the discharge areas for the basins. This could lead to the erroneous conclusion that there is no potential impact. While we have reviewed some of the work done by Geo-Trans on the hydrogeology of the area, as long as there is no plan for restoration of the areas contaminated by underground nuclear testing, these ultimate discharge areas need to be explicitly identified and discussed.

12 3. The reference to Section 4.1.3, as including a discussion of the effects of past underground testing on the groundwater[6], seems to be incorrect.

4. The use of "significant existing contamination"[7] as a rationale reducing the significance of the impact to down gradient groundwater quality from future underground nuclear testing is in conflict with the discussion of the uncertainty concerning existing contamination[8].

13 Determining the amount, location, and travel time for groundwater contamination at the NTS will require significant additional resources, unless the Department of Energy chooses to "walk away" from the issue by adopting Alternative Two. Inyo County wishes to participate in the development and review of any additional environmental restoration studies contemplated in the future.

Again, thank you for the opportunity to provide comments to this document. If there are any questions please contact me.

Sincerely,

Brad Mettan
Associate Planner

[4] Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, January 1996, Volume 1, Appendix A, page A-43, lines 24-38.
[5] Ibid., Volume 1, Chapter 4, Section 4.1.3, especially pages 4-148 to 4-152.
[6] Ibid., Volume 1, Chapter 5, page 5-38, lines 37-39.
[7] Ibid., Volume 1, Chapter 5, page 5-39, lines 6-9.
[8] Ibid., Chapter 4, page 4-163, lines 7-15.

BOARD OF COUNTY COMMISSIONERS
ESMERALDA COUNTY, NEVADA

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May 1, 1996

Dr. Don Elle
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NEVADA TEST SITE AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA
8
Dear Dr. Elle:

Esmeralda County welcomes this opportunity to offer comments on the Draft NTS EIS. We have been encouraged by the efforts of your staff and others at DOE\NVO to provide opportunities for public participation in planning the NTS EIS.

Esmeralda County strongly supports Alternative 3 - Expanded Use. We understand the importance of preserving a strong national defense including maintenance of the nuclear weapons stockpile. Historically NTS has been an integral part of America's defense strategy and this has been accomplished with the assistance of several generations of Nevadans. We regard NTS as an essential component in the national defense equation. At the same time, we see an excellent opportunity to augment employment of rural Nevadans with the expected increase in missions.
Esmeralda County has discovered several instances where the Draft EIS fails to adequately address specific issues. We also have several areas of concern regarding safe, routine transportation. We offer the following comments for your consideration:

1 The Summary (S-45) provides a list of the cooperating agencies including four federal agencies and Nye County. Esmeralda County is requesting status as a cooperating agency due to our proximity to NTS. We expect certain impacts over time and believe Esmeralda County should not be overlooked. As an example, in Volume 1 (Page 1-9, Section 1.5), it is explained that the Draft EIS was distributed to specific entities for review and comment.

COUNTY HOUSE P.O. BOX 237 GOLDFIELD, NEVADA 89013

The county governments listed are Clark, Lincoln and Nye. Esmeralda County has historically been excluded when DOE has distributed information or solicited comments. The Draft NTS EIS has not adequately included Esmeralda County on an equal basis with Clark, Lincoln and Nye counties. We fail to

2 understand why our county isn't recognized as a near neighbor. The Draft EIS illustrates DOE's attempts to consult with Clark, Lincoln and Nye counties while overlooking the nearest neighbor to a contaminated site.

Esmeralda County was recognized by the federal government as a labor surplus area due to continued high unemployment over several years. We have been vitally concerned with possibilities for employing local residents. In Volume 1 (Section 4.1.3 Socioeconomics, Page 4-68 through 4-96), DOE provides an extensive examination of socioeconomic trends and
3 factors. The document only considers Clark, Lincoln and Nye counties. The Draft EIS again overlooks Esmeralda County. It is our opinion that the Draft EIS does not adequately address socioeconomics and its related trends because it does not consider Esmeralda County. As stated earlier, we are a near neighbor and the document repeatedly fails to analyze impacts to Esmeralda County.

In the same volume (Section 4.1.12 Environmental Justice), Clark, Lincoln and Nye counties
4 are analyzed in terms of environmental justice. Again, Esmeralda County is not considered part of the equation. It is our opinion that the Draft EIS does not adequately address Environmental Justice since Esmeralda County is excluded from analysis.

It appears that the Draft EIS failed to consider Esmeralda County in other than generic terms throughout the document. Clark, Lincoln and Nye counties were analyzed extensively. Esmeralda County was not included for analysis. We believe that the Draft EIS cannot
5 stand as written because Esmeralda County (the **other** near neighbor) was not considered for analysis of socioeconomics, environmental justice or even as an agency requiring notification. DOE's bypass of Esmeralda County suggests that the analysis and conclusions are incomplete and open to challenge.

Additionally, we have several transportation concerns. Esmeralda County actively participated in the Protocol Working Group meetings and we share the same belief in conjunction with other rural counties that Highway 95 through Goldfield will eventually become part of the route. We make the following suggestions for your consideration:

Recommendations for Institutional Interaction During Planning and Operations:

6 Formalization of shipment notification procedures, including local jurisdiction notification, with designation of point of contact for each corridor jurisdiction.

MUNICIPAL GOVERNMENT 5 (CONTINUED)

7 . Commitment to regular update meetings, reports and evaluations of past shipments. Meetings to also be scheduled when there are significant changes to the transportation system and in the materials and/or volumes shipped.

8 . DOE to develop and maintain a monitoring program which addresses concerns of local jurisdictions in the event of problems with shipments and resultant issues. The monitoring program would also identify additional impacts and mitigation measures which might occur.

9 . DOE to provide annual report to State of Nevada including pertinent information (i.e. total amount of waste shipped, routes, etc.), problems and their resolution, description of accidents (if any).

10 . Availability of shipper/carrier data to all corridor jurisdictions.

Recommendations for Planning and Training:

11 . DOE to work with corridor jurisdictions to provide effective training opportunities with consideration of direct funding for training programs (with stipends for participants) and accommodation given to volunteers for their participation on weekends.

12 . Opportunity to be given to outside jurisdictions for participation in training offered to corridor jurisdictions.

13 . DOE to provide financial and technical assistance to assure corridor communities have evacuation plan in place.

Recommendations for Procedures and Operations:

14 . Transported loads to be covered or contained to prevent possible aerosol disbursement.

15 . All shipments arriving outside of normal hours required to be parked in NTS safe haven.

16 . Two drivers should be present on each shipment.

17 . Carriers to respond to all travel advisories, notifications of construction delays and make adjustments accordingly.

18 . All vehicles required to undergo quarterly CVSA inspections and must display safety inspection stickers.

MUNICIPAL GOVERNMENT 5 (CONTINUED)

Recommendations for Routing and Selection of Parking Areas:

19 . Primary routing to be on interstate, U.S. or state highways.

20 . DOE to consider working with affected jurisdictions to agree on route or specific segments to be prohibited with DOE gaining authority through contractual agreements with shippers. (Shippers could be prohibited from certain routes through their contract with DOE.)

Route Selection Methodology:

. DOE must commit in the RECORD OF DECISION to clearly understood process for routing of low level waste shipments and to a method that binds the shipper to adhering to the chosen routing alternative. In agreement with the Protocol Working Group, Esmeralda County suggests the following wording for a recommendation on route selection methodology and direction to carriers:

21 > The Department of Energy, Nevada Operations Office (DOE/NVO) will address specific routes for low level waste (LLW) shipments to the Nevada Test Site (NTS). In consultation with the State of Nevada, affected local governments and sovereign Indian nations, DOE/NVO will develop a route selection methodology and identify preferred LLW routing alternatives for inclusion in the *Final NTS Environmental Impact Statement*. DOE/NVO will also stipulate these specific routes in the *Record of Decision* and institute a process for contractually requiring shippers to adhere to the selected routes.

22 . DOE to benefit from local knowledge to ensure the public/environment/economy' will experience the least potential hazard from LLW shipments. The Protocol Working Group should not recommend specific routes but help DOE to establish a methodology.

23 . The issue of routing of radioactive waste is extremely important to the State of Nevada and local communities. The *Record of Decision* should include an agreement to work with local government entities to develop route selection criteria and methodology and to evaluate alternatives. Important criteria to be considered must include population exposure, traffic and accident rates, proximity of sensitive facilities and environmental areas. Contracts under which carriers operate should stipulate specific routes to be taken and those to be avoided.

MUNICIPAL GOVERNMENT 5 (CONTINUED)

24 - DOE to institute policies restricting shipments during holidays, peak tourist travel periods or during special events.

Recommendations for Parking Areas:

25 - DOE to work with State of Nevada and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carriers.

We have appreciated your efforts to inform the public and actively seek comments on the Draft NTS EIS. Esmeralda County is committed to being a good neighbor to DOE/NVO and we are willing to work closely with your agency to ensure safe, routine transportation of low level waste to NTS. Additionally, we ask you to carefully review our concerns about inadequate analysis in the EIS relating to Esmeralda County.

If you have any questions, don't hesitate to call.

Sincerely,

Wade M. Barton
Chairman, Esmeralda County Commission

MUNICIPAL GOVERNMENT 6

Clark County

Department of Comprehensive Planning
RICHARD B. HOLMES
DIRECTOR

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May 2, 1996

U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, Nevada 89114
Attention: Dr. Donald Elle, Director
Environmental Protection Division

SUBJECT: CLARK COUNTY DEPARTMENT OF COMPREHENSIVE PLANNING COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE NEVADA TEST SITE (NTS), AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA

Dear Dr. Elle:

Attached are comments from the Clark County Department of Comprehensive Planning to the draft ***Environmental Impact Statement (EIS) for the Nevada Test Site (NTS), and Off-Site Locations in the State of Nevada.*** We appreciate the opportunity to provide input to this important set of documents. Staff has been especially impressed with the amount of time that Department of Energy (DOE) staff has spent with Clark County staff on deliberating the important issues considered in the EIS.

The Board is especially interested in issues that relate to potential effects to the health and safety of the citizens of Clark County, particularly with respect to the transportation of the waste. While we applaud the DOE's recognition that transportation is an issue of significance with regard to several of the alternative futures being considered in the EIS (notably Alternatives 1 and 3), we are not supportive of the disproportionate number of routing options in Clark County and in the urbanized and rapidly growing Las Vegas Valley.

We look forward to your written response to our comments, and concerns as well as their careful consideration in the final Record of Decision. If you have any questions please contact me.

Sincerely,

Richard B. Holmes
Director

cc: James Ley
Bonnie Rinaldi
Dennis Bechtel

COMMISSIONERS
Yvonne Atkinson Gates, Chair • Paul J. Christensen, Vice Chairman
Jay Bingham, Lorraine Hunt, Erin Kenny, Myrna Williams, Bruce L. Woodbury
Daniel L. "Dan" Seaton, County Manager

Clark County Department of Comprehensive Planning
03 May 1996

Comments on the Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, DOE/EIS 0243, January 1996

1.0 Introduction

The Clark County [Nevada] Department of Comprehensive Planning is presenting these comments on the *Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, DOE/EIS 0243, January 1996 [the "Draft EIS"]*, in accordance with implementing procedures of the National Environmental Policy Act of 1969 and Council on Environmental Quality regulations. The focus of these comments is on *Alternative 3, Expanded Use*. While establishment of solar enterprise zones at Eldorado Valley and Dry Lake Valley in Clark County [*Alternative 4*] would eliminate some recreational opportunities in these areas, we feel that any unavoidable impacts are of a nature that may be mitigated satisfactorily. If *Alternatives 1 or 2* are chosen, present institutional interactions between the U.S. Department of Energy [DOE] and Clark County would need to be modified to enhance county monitoring of DOE programmatic, maintenance, restoration, and/or security functions at the Nevada Test Site [NTS].

1

Staff members of a number of county departments and agencies have reviewed the *Draft EIS* and have provided their views for inclusion in this comment document. While these comments are being submitted within the established comment period, we reserve the right to provide written and oral comments about the *Nevada Test Site Environmental Impact Statement [NTS EIS]* and related processes throughout the course of its preparation. Further, we are interested in reviewing and submitting comments on any external drafts of the *Record of Decision* prior to its publication in final form.

Clark County planning staff have consulted with representatives of other affected counties, Indian tribes, jurisdictions within county borders and the State of Nevada. During this process, we have identified a number of common concerns and points of view as well as a divergence of positions in certain areas. In the following text, we have identified certain common issues where we feel that this will provide breadth or depth to our comments.

In actions internal to the county, professional and technical staff have identified, discussed and made recommendations regarding issues of greatest concern. In addition to the 11 potentially affected environments addressed in the *Draft EIS*, we have identified a number of process and substantive areas of concern to us. These include, under Alternative 3, *Expanded Use*:

2 [1] potential costs to county governments and commercial enterprises for mitigation or preventative measures [e.g., emergency response] made necessary by increased numbers of truck shipments, especially through the Las Vegas urban area;

3 [2] potential effects on property values [property values along transportation routes;

4 [3] environmental justice with regard to transportation routes; and,

5 [4] the methodology for selection of highway routes and the establishment by DOE of safety and routing requirements for carriers.

Clark County planning staff is also interested in the way in which DOE views the issues of risk and impact assessment and the manner in which its representatives interpret and communicate any findings in these areas. These include concerns about the use of probabilistic risk assessment techniques and the omission of estimates of impacts of importance to local governments [e.g., unrecognized costs, environmental justice, perceived risk].

6

While we understand that there are significant differences in program activities and materials to be handled, we submit that there are common elements and potential impacts that are best considered in an overall context. Among others, these include the design and operations of the DOE transportation system for a number of simultaneous shipping campaigns, related risks and impacts, perceptions of risk, and mitigation planning and implementation.

Further, we are most interested in the continuation and enhancement of dialogue among the DOE, local governments, Indian tribes, interest and environmental groups, and other stakeholders. Such scheduled and unscheduled interaction recently has been shown to be valuable in the identification, clarification and addressing of issues important to stakeholders in the *EIS* process. This process is needed to ensure that the affected parties in Nevada will have the ability to respond to future events and recommendations that will not have been finalized prior to the completion of the NTS EIS.

7

A good example of this process is the functioning of the NTS Transportation Advisory Group and its Protocol and Risk Working Groups. These groups have met regularly over the past 18 months with the resultant open dialogue between staff and management of DOE and various jurisdictions. In some cases, this dialogue has led to immediate DOE response to particular action items, including the rerouting of low-level radioactive waste [LLW] shipments through North Las Vegas. Recently, the Protocol Working Group provided recommendations for DOE consideration in the *Record of Decision* for the *NTS EIS*.

This process would also be most effective in stakeholder participation in the development of the *Resource Management Plan*, to be completed after the *Record of Decision* is accepted. We believe that *Record of Decision* for the EIS should contain a schedule for implementing the *Plan*. By including such a schedule, DOE will demonstrate its commitment to the process that must include full interaction with local governments and other stakeholders.

8

Some of our comments, concerns and questions were raised at hearings held in Las Vegas and are reiterated and expanded upon in the attached document. In general, our comments are related to Clark County government's mission of providing programs to support the health, safety, economic well-being and quality of life of its residents in a cost-effective and efficient manner. The commentary relates to [1] management of the EIS process and [2] present and potential and impacts due to uses of the Nevada Test Site as outlined in the *NTS*

MUNICIPAL GOVERNMENT 6 (CONTINUED)

2.0 DOE's Policy and Management of the EIS Process for the Nevada Test Site

9 10 11 12 13 **2.1 Potentially Affected Areas.** The definition of potentially affected geographic or jurisdictional areas in the *Draft EIS* is unclear. For instance, the entire transportation system of southern Nevada is used in the discussion regarding routing, but potential impacts along these routes are not discussed. For example, probability risk assessment numbers are used along the routes, but there is no discussion of such issues as environmental justice, impacts on traffic congestion, infrastructure damage or costs of maintenance, except in the immediate area of the NTS. Likewise, the *Draft EIS* states that 90% of NTS workers live in Clark County but no attention is given to potential impacts on county services that may be needed for additional NTS workers under *Alternative 3*. Other examples may be provided for each of the affected environments addressed in the *Draft EIS*.

14 In effect, by limiting the regions of interest for affected environments to localized areas around the NTS, DOE precludes consideration of three issues of great importance to Clark County - potential increased county costs for mandated services, potential decrease in tax revenues due to perceived risk, and the development of mitigation programs that would become necessary if *Alternatives 3 or 4* are selected.

While the NTS itself is a large isolated section of land, transportation corridors which are used to move material to and from the site cut through a basic population of approximately 1,600,000 people, a visitor population approaching 3,000,000 people per month, land and property assessed in excess of $26 billion, and extremely sensitive corridors where one accident could potentially cause the contamination of a water supply utilized by Nevada, Arizona, California and Mexico.

15 When discussing the NTS, all of southern Nevada must be taken into consideration as a potentially affected area. Any action associated with the NTS may have little noticeable impact on the Southern Nevada economy due to its tremendous growth rate. However, since this is a tourist-driven economy, even a minor downturn in the tourist industry due to a widespread perception of undue risk could have a major impact on tax revenues used to support county services.

16 **2.2 Assessment of Cumulative Effects and Interaction Among Environmental Impact Statements Affecting the Nevada Test Site.** The Draft EIS refers to 18 programs in various stages of EIS or NEPA processes but stops short of addressing or even identifying the impacts of the programs, taken together, over a period of time. The EISs and NEPA studies consider these programs separately, and in most cases, few significant negative effects are noted or anticipated. We feel, however, that if more than one program is implemented, the impacts may no longer be viewed as independent actions and all must be considered in conjunction with others.

MUNICIPAL GOVERNMENT 6 (CONTINUED)

17 We are concerned with the manner in which the NTS EIS will consider decisions based upon these assessments given the fact that they will be made at different times. We are especially interested in the proposed method of handling decisions that are in conflict with those reached in the *NTS EIS Record of Decision* and those supported by southern Nevadans.

18 In the EIS process, consideration should be given to past testing activities at NTS, all current or planned NTS activities as related to the DOE waste management and environmental restoration, nuclear stockpile stewardship and defense-related programs, and future high-level waste disposal and storage options.

For example, the *Waste Management Programmatic Environmental Impact Statement (PEIS)* is a nationwide study examining the treatment, storage or disposal of low level mixed wastes, low level waste, transuranic waste, high level defense waste, and other types. These wastes could be disposed of at one to sixteen DOE sites. The *PEIS* identifies the NTS as a major possible site for the management of wastes since it is the largest site in the DOE complex. In the PEIS, the NTS was found to have the least negative health and socioeconomic impacts on the surrounding population of any DOE site.

19 Thus, the potential for continued or expanded shipments of radioactive, mixed and hazardous wastes to the NTS is high. Such materials may include contaminated dirt, mixed wastes, plutonium pits and other low-level or high-level nuclear materials. All of these materials are dangerous and, taken cumulatively, they may pose greater risks and result in higher impacts than any one EIS could estimate. Until such time as each of these *EISs* are finalized, and the NTS is identified as an acceptable or unacceptable site, no informed decisions concerning any individual location may be made.

20 Each of these projects is supported by collection, management and analysis of data that would also be useful in the *NTS EIS*. Many of the assumptions regarding transportation mode and routing may be exactly the same, as would be the types of impacts that will be studied. This has implications for development and maintenance of common EIS data standards, management policies and analytic methods.

At this point, DOE has not published any plan for interactive data collection, management and analyses, and study methodology among the EISs for which they are responsible. Such a plan would be of great utility as a management tool for DOE and as a guidance document for local governments as they continue their responsibility to monitor the DOE environmental management and waste disposal programs.

MUNICIPAL GOVERNMENT 6 (CONTINUED)

We agree with the State of Nevada and other county jurisdictions that if DOE adopts a proposed action that includes the transportation of any of the materials addressed in other EISs, a cumulative impact analysis for transportation must be prepared. This EIS must address the combined functions of DOE's Environmental Management and Defense Program activities at the NTS and should include transportation information for each specific material, (1) origin and destination; (2) quantity or volume shipped; (3) total radioactivity and maximum radioactivity per individual shipment; (4) shipping container characteristics and capacities; (5) shipment mode or modes; (6) transportation service options; (7) carrier qualifications and selection procedures; (8) shipment route or routes; (9) cumulative shipment miles; and (10) timing of shipments. 21

Such a cumulative impact analysis for transportation would define a scenario that takes into account all possible actions. That is, a meta-evaluation of all impacts taken together, using integrated data management and analysis techniques, would be useful to provide a realistic assessment of the potential risk and impacts to affected areas over certain periods of time. Only in this way, would DOE decision-makers be able to see the potential consequences of their actions.

3.0 Impacts

3.1 Transportation Routes. There are ten highway routes examined for shipments of waste to the NTS under *Alternative 3*. Eight of the ten routes propose the transport of a relatively large number of shipments through Clark County with five of these through the most densely populated part of our community on I-15, U.S. 95, and U.S. 93. Only one alternative considers a rural routing in Nevada which would avoid metropolitan Las Vegas. While the *EIS* does not specifically state a preferred route, it does name primary and alternate routes. The primary route would carry waste south on I-15 through the Spaghetti Bowl interchange with U.S. 95], currently under reconstruction, and north on U.S. 95 to the NTS. This route utilizes areas of greatest hazard and lowest levels of service in the area. In addition, present roadway construction projects, particularly at the Spaghetti Bowl interchange, is planned to last at least seven years. 22

Clark County is in the early stages of a 10-year transportation improvement project that will see extensive construction, reconstruction and other modifications of its arterial road system. It has been demonstrated that construction projects are related to increased congestion, a slowing of traffic, and an increase in accidents, thus lowering of levels of service]. Given the ambitious clark County program, one must analyze the need for enhanced traffic management programs or other remediation programs to lessen its effect. A potentially significant increase in nuclear waste traffic must also be considered in such plans. 23

MUNICIPAL GOVERNMENT 6 (CONTINUED)

DOE's specificity in defining potential highway shipment route is useful in assisting local governments to assess the necessary and capabilities of public safety programs, potential economic costs to local governments and residents, health and safety risks to residents and visitors, and effects on the surrounding environment. However, that brings into question route selection methods utilized by DOE for different types of radioactive waste. At present, federal regulations regarding the transportation of low level, mixed waste, and hazardous waste allow the carrier to select routes based, primarily, upon time and distance considerations. This is a major concern to Clark County since we feel that a careful route selection methodology should be agreed upon by DOE and affected jurisdictions and the resultant routing be used by carriers. The establishment or use of such a methodology, similar to that used for highway route-controlled quantities, would provide a basis for identifying and providing priorities for variables to be used in route selection. 24

3.2.1 Transportation Route Selection Methodology. Under current federal regulation and transportation practice, all waste that could be transported to the NTS would traverse the most populated areas and most congested traffic zones in Clark County. We feel that risk and impact methodologies, when properly conceived and used, would provide a approach to route selection that would take into account those factors believed to be important by jurisdictions through which the material would pass.

A valuable reference point for the development of such a methodology is the 1993 draft report, *Identification of Factors for Selecting Modes and Routes for Shipping High-Level Radioactive Waste and Spent Nuclear Fuel*, prepared for the U.S. Department of Transportation [DOT] under provisions of the Hazardous Materials Transportation Safety Act of 1990. This report may be regarded as a first step toward a more comprehensive examination of the problems of nuclear waste route selection and risk analysis. The report is useful because it highlights a number of factors not usually considered in risk analysis.

In fact, we believe that the suggested DOT route selection methodology places greater importance on impacts and risks of interest to local and state governments rather than probability-based risk measures used by DOE to assess routes. Given this, we suggest that DOE use the DOT material as a guideline for establishing comparative highway route selection methods that would place priority on impacts and risks most commonly preferred by state or local routing agencies. 25

In summary, we feel that probabilistic risk assessment is an appropriate first step in identifying eligible routes for further examination. The next step should be comparative route assessments that consider, among other variables, non-calculated risks, risk in context with other transportation system operations and area demographics, the relationship between identified risks and impacts, and other contingencies. 26

MUNICIPAL GOVERNMENT 6 (CONTINUED)

27 **3.2.2 Use of Selected Routes by Carriers.** Once the routes are selected, the *NTS EIS* must clearly provide for a process by which carriers are bound to use the routes. Clark County officials have documentation to show that DOE facilities have contracted or otherwise agreed with carriers that they use only designated routes. This is true for source facilities such as Fernald and destination facilities such as INEL. We feel that DOE must commit to stipulating, by means of contract requirements with carriers, routes or segments of routes that may be used for waste and nuclear materials shipments to NTS, except under special circumstances.

28 Clark County planning staff agree with State of Nevada officials that carrier contracts that require adherence to routing preferences may be crafted in compliance to federal or state laws and regulations that deal with radioactive or hazardous materials route designations. DOE, as the shipper of these materials (or the facility operator acting on behalf of DOE), may incorporate provisions into contracts with carriers that require the carrier to perform in specified ways. As long as DOE does not attempt to bind carriers to provisions that are illegal or in violation of existing regulations, there is nothing to prohibit DOE from using the contracting process to enforce the use of routes that are acceptable to DOE/NTS stakeholders (i.e., affected local governments and sovereign nations impacted by shipments to NTS).

29 The process by which DOE is permitted to solicit and award contracts can accommodate the requirement that carriers use certain routes or avoid certain unacceptable segments of routes. If such accommodation is not possible with general freight carriers, DOE should commit to the use of contract carriers who are agreeable to the requirements even if additional costs are incurred. We feel that DOE should commit to such a process in the *Record of Decision* for the EIS.

30 **3.3 Perceived Risk.** DOE must address perceived risk of nuclear waste shipments within Clark County. The current level of shipments to NTS has already caused widespread public concern in Clark County and possible large scale shipping campaigns of LLW and other wastes through the Las Vegas Valley could cause significant adverse socioeconomic and cultural impacts even if no accidents occur.

31 The failure to relate perceived risk and other non-tangible aspects of risk to public safety and concern is a significant omission in DOE thinking and makes the *Draft EIS* vulnerable to valid criticism. For example, despite improvements to the Three Mile Island facility after its accident, the perceived risk of nuclear power has curtailed that facility's use. In this case, perceived risk has had a more substantial effect on use of nuclear power than calculated risk. The effects of perceived risk may be even more pronounced when individuals are witness to large numbers of shipments passing near their neighborhoods or resort areas of their preference.

MUNICIPAL GOVERNMENT 6 (CONTINUED)

32 In Clark County's case, we are most concerned with the effect of perceptions and possible resultant stigma on the tourist and gaming industry of southern Nevada. DOE and other studies have shown that negative perceptions usually result in short term changes in behavior and impacts. However, even a short-term drop in gaming revenues could have a huge effect on the tax base of the county.

Ed. Note: The following was extracted from State of Nevada comments and placed here to emphasize the importance of the issue to Clark County. Nevada-sponsored research on stigma effects and potential impacts provides a solid theoretical and methodological base on which DOE may build to assess these types of impacts on local and regional economy, public revenues, public services, and community quality of life. These assessments should take into account the increasingly competitive gaming and tourist marketplaces and the important role that any negative perceptions could have. It is possible that, through the social amplification of risk, even relatively minor events or accidents could have serious economic consequences that would immediately supersede any expected benefits that would be derived from NTS employment. It is essential that the NTS EIS thoroughly assess stanford and stigma impacts in a comprehensive and integrated manner.

33 There is evidence that individual property owners may be affected by negative perceptions of shipment corridors or roads that may carry nuclear waste shipments. The court case, *Kowis vs. Santa Fe*, has demonstrated the consequences of such perceptions on property values. In this New Mexico case, it was determined that undeveloped land in a rural area had lost from 11% to 30% of its value because of the designation, even though not even one shipment had yet been made. If these diminished values are applied to the urban Las Vegas area, the results would be most serious not only to individuals but also to the county because of a decreased tax base.

34 **3.4 Public Safety Program Training and Preparedness.** Protection of the health and safety of its residents and visitors is of vital importance to Clark County. Health and safety risks to individuals as a result of expanded NTS operations must be delineated and risk management programs considered to minimize potential risks. Information requirements for such risk management programs include the identification of most likely shipping routes, federal, state, and local government emergency management and emergency medical resources and requirements, and hazardous and high accident locations along the potential routes and special populations, among others.

35 The *EIS* must also address such issues as institutional arrangements for shipment tracking, need for escorts, prenotification to state, local, and tribal governments, vehicle safety and radiological inspection programs, methodology for selection and ongoing review of routes, ambient air quality, water supplies, and so on. Given these considerations, the *EIS* must attend to roles and responsibilities of the DOE and local governments and methods of interaction to assist the local governments in meeting their public safety obligations. We 36 37 38 39 agree with members of the Protocol Working Group that DOE should present detailed plans and schedules for such a mitigation program in the *Record of Decision*.

3.5 Socioeconomic Impacts

40 Clark County planning staff feel strongly that the *NTS EIS* should consider the direct, indirect, and induced effects of employment and procurement associated with NTS activities. 90% of the NTS work force resides in Clark County and a large portion of the support activities occur in the Las Vegas Valley. NTS-related growth has the potential to cause negative impacts on the need for public services and facilities supported by tax revenues. In recent years, the phenomenal growth of gaming and tourism has kept pace with other forms of development and population growth. However, it cannot be assumed that this will remain true into the next century. These economic effects associated with additional NTS-related population growth could, therefore, generate negative fiscal impacts for state and local jurisdictions in the event that tourism/gaming growth fails to meet that of other areas of the economy.

3.6 Environmental Justice [Impacts on the Minorities and Low Income Groups]

41 Clark County officials feel that the *EIS* must seriously consider federal directives and comply with federal statutes regarding environmental justice to address the concerns and possible differential adverse impacts on Native American, minority and low-income populations. 24% of the population of Clark County is considered to be members of minority groups, with Hispanics [11%] and Blacks [9%] comprising most of this group. 35% of the county population falls into the low income category.

The population within one mile each side of I-15 and the Union Pacific Railroad in Clark County is 38% minority, a significantly higher percentage than the county as a whole. Those Native Americans who live on reservations within county borders are also affected since the both living areas are immediately adjacent or straddle I-15 or U.S. 95. This shows that, because of where they live and who they are, a much greater percentage of minority and low income individuals and Native Americans are placed at higher risk than would be expected if the risk distribution were equitable among the population.

This has been addressed by three federal documents that will have significant effects on the *EIS* process. The first, a *Presidential Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994*, pointed out that existing environmental and civil rights statutes provide many opportunities to address environmental hazards in minority and low-income communities. Application of these statutes may be used to prevent such communities from being subject to disproportional high and adverse environmental effects. The Executive Order provided specific directives regarding federal agency responsibilities and strategies, and gave direction for research, data collection and analysis. In addition, the Order created an Interagency Working Group on Environmental Justice to consist of a number of federal agencies, including DOE.

A second document, *Environmental Justice Strategy* [DOE, 1995], considers DOE's approach and plans to comply with federal statutes. The *Strategy* proposes a partnership of federal, state and local governments and other stakeholders to plan and implement mitigation and remediation activities where prevention adverse impacts are unavoidable.

42 While we commend and support this important program, we have seen very little evidence
43 that the plan was used during the preparation of the *Draft EIS*. First, the region of interest
44 included only those individuals who live in close proximity to the NTS, thus eliminating consideration of the high number of minority and low income group members in Clark County. Secondly, the *Strategy* addresses the use of the best possible data and the sharing of this information with stakeholders. If this had been done, the significant affected population of Clark County would have been included in the study.

45 As in other impact areas, we feel that any environmental justice analysis must address cumulative effects, including social amplification and stigma impacts. Social amplification and stigma effects are important, in part, because of the importance of the tourism and gaming industry to Clark County's economy. While adverse impacts to tourism and the economy have the potential of being detrimental to all residents of Clark County, minority and low income populations who rely on the gaming industry for service level employment could be even more adversely affected if the tourist economy is impacted.

The third document, the *U.S. Department of Energy American Indian Policy*, provides guidance to DOE personnel regarding management actions affecting American Indians. This policy pointed out that the DOE recognizes the sovereignty of Indian tribal governments and that the Department will consult with tribal governments to assure that tribal rights and concerns are considered prior to any action that may affect tribes. Specifically, each field office or DOE installation with areas of cultural or religious concerns to American Indians "will consult with them about the potential impact of proposed DOE actions on these resources and will avoid unnecessary interference with traditional religious practices."

46 Expanded use of the NTS has the potential not only to disturb cultural artifacts and make impacts on long-lived cultures but also to adversely affect the health and safety of ethnic minorities. These issues, as defined in *Appendix G, American Indian Comments* . . . must be carefully considered by the DOE.

MUNICIPAL GOVERNMENT 7

MAYOR
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CITY MANAGER
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CITY of LAS VEGAS

May 3, 1996

Donald R. Elle, Director
Environmental Protection Division
U. S. Department of Energy
Nevada Operations Office
P. O. Box 14659
Las Vegas, NV 89114

Dear Mr. Elle:

The City of Las Vegas wishes to thank the Department of Energy for the opportunity to comment on the draft of the Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) and Off-site Locations in the State of Nevada. This is an important issue which effects local governments directly. Your group, in particular Frank Disanza and Katie Grassmer, worked on transportation issues and truly worked with local governments to try to understand local concerns.

The City of Las Vegas is the largest incorporated city in Nevada with a population of over 360,000 city residents located within a metropolitan population in excess of 1,000,000 when including the cities of North Las Vegas and Henderson and the unincorporated entities located in the valley under the jurisdiction of Clark County. The Las Vegas metropolitan area represents approximately two thirds of the population of the state and produces five eighths of the economic activity of the state.

Southern Nevada is unique in that it contains large areas of open land, most controlled by various federal government agencies, while at the same time containing a population which is more densely urban than Los Angeles. The economy of Southern Nevada is driven by tourism with seven of the ten largest hotels in the world located in the Las Vegas valley. The image of Las Vegas draws visitors from all over the world. As the fan reaction to the baseball strike has shown, image is a very fragile thing. The entities in the Las Vegas valley work very hard at promoting the Las Vegas image.

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MUNICIPAL GOVERNMENT 7 (CONTINUED)

1 The most common access to the Nevada Test Site is from Las Vegas by way of United States highway 95. That means that every road shipment of radioactive materials destine for NTS will pass through the heart of Las Vegas, no more than one quarter mile from "Fabulous Fremont Street". No other community in the nation will "see" every shipment, no other community is so dependent on image to maintain prosperity.

2 A release accident is not necessary in order to damage our image. A "fender bender" involving a radioactive load has the potential to produce a headline reading "**Nuclear Accident in Las Vegas**", inopportune timing could produce the loss of millions of dollars to the Las Vegas economy. Multiple occurrences could be devastating, our job is to protect the residents of Las Vegas from threats to their well being.

The following are items which the City of Las Vegas feels should be detailed in the Nevada Test Site Environmental Impact Statement.

3 1. This should take into account all aspects of the DOE waste system. Southern Nevada is affected by the waste streams generated by the entire DOE complex, and transportation system should not ignore the effects from the potential repository or interim storage of high-level waste. "Everything is connected to everything else", a change in one part of the system effects the whole program.

4 2. DOE should establish a firm routing policy which requires carriers of DOE shipments to follow specific routes. Deviation from these routes should be on an emergency only basis.

5 3. Although Hoover Dam is on a US highway, DOE should eliminate shipments across this structure. From a public perception perspective and from a tourist exposure framework, this routing is not wise. Davis Dam or the I-40 crossing near Needles California are better choices.

6 4. Although outside the formal notification process, DOE should make available real-time information on shipments through the Las Vegas valley.

7 5. Las Vegas makes a formal request for a DOE commitment to maintain a Radiological Assistance Team (RAT) or similar group at NTS for the duration of waste operations at NTS.

8 6. DOE should conduct and fund yearly accident scenario exercises with local governments in the Las Vegas valley to assure that a good working relationship exists between the DOE and local emergency response organizations.

MUNICIPAL GOVERNMENT 7 (CONTINUED)

The well being of the citizens of Las Vegas includes health, safety and economic well being, it is not enough do numerical analysis of exposure rates and dose to population. The very real effects of accidents on a tourist economy must be evaluated. A plan to mitigate these effects must be in place if this material is to be shipped through southern Nevada. 9 10

Sincerely,

Peter Cummings
Manager, Administrative Services
City of Las Vegas

PC:SD

MUNICIPAL GOVERNMENT 8

Eureka County
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Phone (702) 237-5407 FAX (702) 237-5169

May 1, 1996

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114

RE: Comments by Eureka County, Nevada, on the Draft Environmental Impact Statement for the Nevada Test Site

Dear Dr. Elle

On behalf of Eureka County, Nevada, I am submitting the following comments for the record on the Department of Energy's (DOE) Draft Environmental Impact Statement for the Nevada Test Site.

Eureka County's interests in the Nevada Test Site include the potential transportation impacts from shipments to the site that might use highways within Eureka County as primary or alternate routes. In addition, our experience related to aboveground and underground nuclear weapons testing has shown us that activities at the Nevada Test Site can have a profound and far reaching impact on us. Eureka is an affected unit of local government under Section 116 of the Nuclear Waste Policy Act, and retains an active interest in the interrelationship of Yucca Mountain activities and Nevada Test Site activities.

Preferred Alternative

The DOE has indicated that it is likely to choose portions from each of the four alternatives presented, selecting specific options from the various alternatives. This is confusing and does not provide the public with the kind of information needed to evaluate the alternatives, since DOE has stated that none of them will actually be chosen. Instead, the DOE should present an actual preferred alternative along with other options so that the public can understand what DOE proposes to do. 1

1

MUNICIPAL GOVERNMENT 8 (CONTINUED)

No Action Alternative

2 Alternative 1, to continue current operations, is designated as the "No Action Alternative" This is an inappropriate designation for activities which are being carried out in the absence of a current EIS. In addition, several of the activities described under this alternative do not relate to the defense mission of the NTS, and are activities that belong in the expanded use alternative Receipt of waste from out-of-state generators should not be part of a "no action" alternative

Yucca Mountain

3 The draft EIS appears to exclude the portion of NTS designated for the Yucca Mountain project. The EIS should clearly state why this portion has been excluded After all, a compelling argument for locating a high-level waste repository at Yucca Mountain was its location, in part, on the Test Site. The EIS must acknowledge, throughout, the interdependence and connections that exist and may exist in the future between NTS operations and Yucca Mountain operations Also the EIS should make full use of the wealth of information generated by the Yucca Mountain project

Radionuclide Surface Contamination and Source Terms

4 More detailed information is needed on radiological source terms and surface contamination throughout all environmental media at NTS, especially locations where radionuclide levels exceed regulatory standards, including the off-site locations

Cumulative Impacts

The cumulative impacts analysis is deficient The potential cumulative impacts from the transportation, treatment, storage and disposal of both radioactive waste and special nuclear materials is not assessed and should be Of special note are the cumulative impacts from the Yucca Mountain project in combination with proposed NTS activities To this analysis should be added the cumulative impact of these activities not only on southern Nevada but on the entire state of Nevada

5 The cumulative impact analysis of Bureau of Land Management reasonably foreseeable future actions does not mention the Central Nevada Communication Sites Proposed Plan Amendment and Environmental Assessment, which recommends that Navy threat emitters be confined to the Dixie Valley area. This analysis is relevant in the overall scheme of federal government activity in Nevada, especially as it relates to the potential future connections between the Navy and the Air Force practice areas over Nevada

The cumulative impact analysis for local government is confined to southern Nevada counties and communities only. The activities of the Nevada Test Site impact the entire state. Potentially transportation of radioactive materials could occur in northern Nevada counties, yet there is no

MUNICIPAL GOVERNMENT 8 (CONTINUED)

analysis of future projects in northern Nevada counties that could contribute to a cumulative impact

5 (1003) The cumulative impact analysis of the U S Navy's reasonably foreseeable future actions is deficient The discussion on pages 6-3 and 6-4 does not address the proposed Diamond MOA and the Navy's plans to expand their practice areas to include nearly all of central Nevada. The section's conclusion, "The sole concern is the proposed withdrawal of land. This potential issue is of a statewide nature and is not directly related to NTS programs," ignores the many concerns voiced by both residents and local governments that the impacts of Navy activities related to supersonic and low level practice flights are adversely affecting rural Nevada communities

One common suggestion that we hear is that those flights should be redirected to the Nevada Test Site, and that the Navy, Air Force and Department of Energy should cooperate to ensure that all military practice needs are accommodated without disrupting rural communities. This should be addressed in the EIS

Military Airspace

6 The EIS should address the possible use of NTS airspace for practice for both the Air Force and the Navy, working cooperatively This could be in the expanded use section or alternative use section In a state dominated by the federal government, it is essential that branches of the federal government work together to minimize the adverse impacts of their activities on the residents of Nevada This is a prime example of where we should see this type of cooperation, related to the purposes of national defense

In the Framework for Resource Management Plan, page 4-8, the goal "Coordinate airspace requirements with surrounding land-management agencies and make restricted airspace available for uses compatible with DOE's missions" is a good start. It would be unfortunate if that were determined to mean that DOE could not cooperate with the Navy regarding shared airspace use of the NTS because of this language. It is essential that for this resource management plan, the language be open to the possibility of such cooperation and coordination

Transportation

7 The EIS fails to sufficiently provide a detailed description of the transportation activities associated with each proposed alternative. Such information is needed to allow all affected parties including State and local governments to assess the on-site and off-site transportation risk and impacts of each alternatives

Eureka County was a participant in the Nevada Test Site Transportation Advisory Group, Protocol Working Group The following recommendations, many of them discussed by the Protocol Working Group, should be incorporated into the EIS

MUNICIPAL GOVERNMENT 8 (CONTINUED)

8 Shipment notification procedures including local jurisdiction notification must be formalized, including designation of a point of contact for each corridor jurisdiction.

9 DOE must notify all communities of potential shipments and provide correct names and numbers. Public notices should be place in the newspapers of record for each community at the start of each shipping campaign. DOE needs to ensure that local emergency response agencies are able to identify low level waste shipments and provide immediate notification for federal and state agencies responsible for responding to or supporting the handling of accidents.

10 There should be regular update meetings, reports and evaluations on past shipments.

11 DOE should develop and maintain a monitoring program which will address concerns of local communities if a problems begins to occur with truck shipments and to resolve issues along transportation routes. This monitoring program would serve to identify additional impacts and mitigation measures as they arise.

12 DOE should provide an annual report to the State of Nevada showing pertinent information such as the total amount of waste shipped and the routes used. The report should identify any problems encountered and actions taken to address them. Any accidents should be described.

13 Shipper/carrier data should be made available to all corridor jurisdictions.

14 DOE should provide responding jurisdictions and agencies with the equipment needed to monitor and respond including two new detection instruments per jurisdiction, in-vehicle radio repeaters, and surplus emergency response equipment.

15 DOE should work with corridor communities to make training opportunities as effective as possible. Communities which are not directly on transportation routes should be provided the opportunity to participate in emergency response training courses offered to corridor communities.

16 DOE should provide financial and technical assistance to ensure that corridor communities have up-to-date evacuation plans in place.

17 DOE must commit in the Record of Decision to a clearly articulated process for routing of low level waste shipments and to a mechanism that binds the shipper to adhering to the identified routing alternative.

18 DOE should provide the State and local jurisdictions with copies of the route and risk analyses for each carrier transporting Class 7 materials.

19 DOE should work with the State and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carrier vehicles.

MUNICIPAL GOVERNMENT 8 (CONTINUED)

Conclusion

We believe that additional work must be done in a number of areas for this EIS to be adequate. Thank you for considering our comments.

Sincerely,

Sandra L. Green

Sandra L. Green
Project Coordinator

cc: Leonard Fiorenzi

MUNICIPAL GOVERNMENT 9

LINCOLN COUNTY
NUCLEAR WASTE PROJECT

P.O. BOX 80
PIOCHE, NV 89043
(702) 962-5495
(702) 962-5497

May 2, 1996

Mr. Donald R. Elle
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, Nevada 89114

RE: Lincoln County Comments to the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada

Dear Dr. Elle:

On behalf of Lincoln County and the City of Caliente, I am pleased to submit the following comments to the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada. The County and City participated extensively during scoping of the NTS Sitewide EIS providing both verbal and written comments to the scope of the document. Key issues raised during scoping by the County and City are listed below.

1. A cumulative assessment of on and off-site radiological exposure risks associated with historical, present and future activities at NTS must be included within the EIS.

2. For every proposed or potential activity considered for NTS, an analysis of related direct and indirect environmental, social and economic costs and benefits should be undertaken and contained within the NTS Sitewide EIS.

3. The NTS Sitewide EIS should consider the geographical distribution of historic, present and potential NTS related benefits and risks with particular emphasis upon disequity between local areas within Nevada and among states hosting DOE facilities.

4. The NTS Sitewide EIS should consider implications of past, present and future effects of transporting radioactive materials both into and out of the site.

MUNICIPAL GOVERNMENT 9 (CONTINUED)

5. The NTS Sitewide EIS should include a comprehensive identification and evaluation of options for mitigating impacts documented through the study process.

6. Prior to publishing a final NTS Sitewide EIS, acceptable mitigation measures must have been determined and should be included as a component of any subsequent Record of Decision.

7. Effective measures to more equitably distribute possible future economic benefits of NTS activities to rural communities within Lincoln County and to mitigate other potentially significant impacts, must be identified and evaluated.

8. The potential for NTS land and infrastructure to support private sector industrial activities must be considered.

9. The NTS Sitewide EIS should include an epidemiological baseline for communities surrounding NTS.

10. The potential for NTS to serve as a location for projects carried out in cooperation with the State of Nevada and local governments designed to assist with mitigation of within-state environmental problems while providing important national research and development benefits must be considered. A specific example which should be considered would be use of Area 23 or Area 6 for management of municipal solid wastes generated throughout Nevada coupled with waste-to-energy and recycling research and development activities.

11. Use of the 45,000 acre Aerojet research and development site in Coyote Springs Valley as a possible location for NTS related solar energy demonstration projects should be considered within the EIS.

The comments which follow generally address the extent to which the Draft EIS considers the various issues raised by Lincoln County and the City of Caliente.

1 Through verbal and written comments to the scope of the NTS Sitewide EIS, Lincoln County and the City of Caliente provided ample evidence of the potential for cumulative dose effects from exposure to radiation resulting from historical, present, and potential NTS activities. Important issues of cancer latency and genetic damage from cumulative doses were introduced. Despite these comments, the Draft EIS fails to consider cumulative aspects of dose attributable to historic source terms. The document further fails to consider the cumulative dose from various source items. The statement on line 4 of Page 2-16 of Volume 1, "the risk assessment encompasses risks contributed from past operations ...", is very misleading. The EIS does not consider cumulative risks to receptors of repeated doses from historic, present, and future exposure. In fact, it appears that transportation health risks and other operational health risks are treated in separate appendices, with no consideration of cumulative dose. NEPA guidelines require that the EIS consider cumulative effects.

2 Lincoln County and the City of Caliente are concerned that the Draft EIS does not sufficiently address the potential for historic, on-going, and prospective activities at NTS to result in both favorable and undesirable impacts upon the County and City. To a large extent, potential ramifications of NTS activities upon the County and City are ignored within the EIS. This situation appears to result from the adoption by DOE of an assumption that future patterns of residential settlement by NTS workers will mirror the past (wherein most workers have resided in

MUNICIPAL GOVERNMENT 9 (CONTINUED)

the Las Vegas area and commuted to NTS by way of subsidized federal busing). As the NTS EIS looks to the next several decades, it is inappropriate to only assume that subsidized transportation services will be sustained and that workers will reside primarily in Clark County. Reliance upon this flawed assumption has resulted in the Draft EIS failing to consider alternative worker settlement patterns and resulting impacts upon potentially affected communities. CODE F

During scoping, Lincoln County and the City of Caliente provided DOE (through participation in the South-Central Nevada Federal Complex Advisory Board (SNFCAB)) with evidence of the significance of NTS to the economy of the County compared to that of Clark County. Written comments to the scope of the NTS EIS submitted by Lincoln County and the City of Caliente documented the relative degree of importance of NTS to the economy of the County in comparison to Clark County. Data provided by Lincoln County demonstrated that NTS employment represented 4.88 percent of Lincoln County personal income in 1990. This compared to NTS employment contributing just 0.14 percent to personal income within Clark County during 1990.

Despite the loss or gain of NTS employment representing the "most consequence" for Lincoln County relative to Clark County, the NTS EIS does not consider economic or fiscal consequences in Lincoln County. Section 4.3.4 of the Implementation plan for the Nevada Test Site EIS indicated that the EIS would address socioeconomic concerns of the surrounding cities, counties, and the State of Nevada. Section 5.3.4 of the Implementation Plan notes that the environmental consequences section of the NTS EIS will evaluate potential socioeconomic consequences within the region of influence for each alternative. Section 4.1.3 of the NTS EIS defines the region of influence as the area in which the principal direct and secondary socioeconomic effects of site actions are likely to occur and are expected to be of the most consequence for local jurisdictions.

3 The Draft EIS limits consideration of economic and other consequences to Clark and Nye counties. The EIS demonstrates that seemingly large changes in NTS employment in Clark County result in relatively small impacts. Alternatively, a small change in total employment in Lincoln County would result in relatively large and significant impacts to the local economy. By focusing upon economic and fiscal impacts in Clark County, the Draft EIS gives great detail to estimation of insignificant consequences. Had the EIS considered potential economic impacts in Lincoln County, significant change would have been detected. This might be particularly true had the Draft EIS considered the implications of either suspending subsidized busing of employees between Las Vegas and NTS or considered provision of busing through Gate 700 as an option for employees who might then choose to reside in Lincoln County.

In written scoping comments, Lincoln County and the City of Caliente requested that the NTS Sitewide EIS evaluate historical and projected future distribution of risks and benefits of DOE activities to communities surrounding the site. Section 4.3.6 of the EIS Implementation Plan indicated that the EIS would examine "the proportional benefits and risk related detriments incurred by communities surrounding NTS". In addition, Section 4.3.6 of the Implementation Plan noted that the EIS would "begin to evaluate how such impacts could be addressed and mitigated if they are found to occur". Despite these commitments within the Implementation Plan, review of the Draft EIS reveals no consideration by DOE of possible disequitable distributions of NTS related risks and benefits. As a consequence, no identification of possible measures to mitigate such effects is offered in the document. The Draft EIS is woefully inadequate in its treatment of regional distributions of risk and benefit. As a result, the potential for rural communities in Lincoln, Nye, and Esmeralda counties to continue to bear an inordinate measure of risk while accruing relatively 4

MUNICIPAL GOVERNMENT 9 (CONTINUED)

4 CODE little economic benefit from NTS, remains very real.

Verbal and written comments and copies of Lincoln County sponsored transportation risk assessments provided to DOE each substantiated the likelihood that transportation of radioactive wastes through rural areas of Nevada would be more risky than similar transport through rural areas along possible routes in other states. This is largely due to the higher accident rates associated with rural two-lane highways in Nevada. Despite encouragement by Lincoln County to do so, the Draft EIS does not consider the degree of risk in Nevada versus other areas. As a result 5 there is no basis for DOE to conclude that risks might be greater in Nevada. To the extent that within-state risks are greater, efforts should be made to manage risk to bring it in line with that to accrue along routes in other states. DOE must consider relative degrees of risk between states and seek to reduce risk to equitable levels. Options for managing transportation risk should be included within the Draft EIS. Lincoln County and the City of Caliente support transportation mitigation measures identified by the Transportation Protocol Working Group (which developed transportation mitigation proposals in consultation with DOE).

Lincoln County and the City of Caliente are concerned that the Draft EIS generally concludes that potential impacts are either non-existent or insignificant, such that mitigation is not warranted. Due to previously described deficiencies in the EIS analysis of impacts, these conclusions may be in error. In other cases where impacts are identified and mitigation proposed, little evaluation of measure feasibility or commitment to specific implementation is offered. For 6 example, Section 7.11 indicates that emergency response programs will be employed to mitigate impacts of accidents to workers and the public. Section 7.11 also notes that each plan uses resources specifically dedicated to assist the facility in emergency management. Examples given include county emergency command centers, protective clothing and equipment. The Draft EIS does not however, evaluate the availability of these items and/or personnel trained in their proper use within counties along possible transportation routes. As a consequence, there is no guarantee that effective mitigation would occur as envisioned by the Draft EIS. The EIS should evaluate the availability of needed emergency management capabilities along transportation routes and where deficiencies exist, include a commitment to provide needed equipment and training.

The Draft EIS does not apparently consider the potential for privatizing portions of NTS 7 and its facilities. Nor does the document explicitly consider making such facilities available for temporary use by the private sector. Rather the EIS considers only a narrow "government only" suite of mission possibilities. Given likely reductions in federal spending, failure to consider privatization and private uses of NTS appears shortsighted.

During scoping, Lincoln County and the City of Caliente suggested that the NTS Sitewide EIS include an epidemiological baseline for communities surrounding NTS. The availability of this information was deemed necessary to enable monitoring of health effects during the next several decades of NTS operation. The Draft EIS provides no analysis of baseline health information. This is despite recognition within Section 4.1.11 of the document that atmospheric dispersion 8 model calculations predicted exposure to persons living in off-site areas around NTS. Without explicit knowledge of existing health conditions and effects of historical doses to area residents, little if any capability to understand consequences of future exposures to NTS related radioactivity may be possible. The Final EIS and related Record of Decision should include a commitment by DOE to undertake a comprehensive study of and monitor baseline health conditions in communities surrounding NTS.

9 Lincoln County and the City of Caliente, in concert with the South-Central Nevada Federal

MUNICIPAL GOVERNMENT 9 (CONTINUED)

9 (cont.) Complex Advisory Board, suggested that the EIS consider the potential for NTS to serve as a location for projects carried out in cooperation with the State of Nevada and local governments designed to assist with mitigation of within state environmental problems. Such a use of NTS was also seen as providing important national research and development benefits. A specific example offered by SNFCAB considered use of Area 23 or Area 6 for management of municipal solid wastes generated throughout Nevada coupled with waste-to-energy and recycling research and development activities. The Draft EIS does not mention of waste-to-energy or other novel land uses which would serve to mitigate existing environmental problems within Nevada (apart from those on or related to NTS). The vision for a diversified future at NTS which Lincoln County and the City of Caliente anticipated, appears altogether absent within the EIS. The Final EIS and Record of Decision should include more creative options for future uses of NTS.

Lincoln County and the City of Caliente are pleased to see that DOE has included use of the 45,000 acre Aerojet research and development site in Coyote Springs Valley as a possible location for NTS related solar energy demonstration projects. The Final EIS and Record of Decision should maintain this site as a viable option for solar facilities.

10 Most, if not all, map figures within the Draft EIS illustrating the NTS region, erroneously show an extension of Nye County heading east from NTS into the Desert National Wildlife Refuge. This area should be relabeled as Lincoln County.

11 Page 4-19 of Volume 1 of the Draft EIS suggests that the only future DOE activities that could occur within Area 13 would involve environmental restoration. However, the EIS does not provide any description of environmental restoration activities planned for Area 13. It is therefor not possible to conclude the significance of any potential impacts which might result from future DOE activities within Area 13.

I trust these comments will be of assistance to DOE in preparing the Final EIS and related Record of Decision.

Sincerely,

Jude Pitts
Coordinator

cc: Board of Lincoln County Commissioners
Caliente City Council

5

MUNICIPAL GOVERNMENT 10

NYE COUNTY

May 14, 1996

Donald R. Elle, Director
Environmental Protection Division
Nevada Operations Office/U.S. Department of Energy
P.O. Box 14459
Las Vegas, Nevada 89114

Re: Nye County Comments on the Nevada Test Site Draft Environmental Impact Statement

Dear Dr. Elle:

Nye County has appreciated the opportunity to participate as a cooperating agency in the preparation of the Nevada Test Site (NTS) draft Environmental Impact Statement (DEIS) and regrets that resource constraints limited us from participating more fully. We are pleased to offer the accompanying comments for your consideration. We recognize that the County has not met your May 3rd deadline, but request that you give due consideration to the concerns we raise.

1 Nye County supports all alternatives proposed except Alternative 2, which calls for discontinuing operations. Our preferred alternative is #3 which calls for expanded use. The expanded use alternative, however, needs to be accompanied by a more complete Nye County economic impact discussion. The DEIS socioeconomic impact discussion, in general, offers little insight into
2 NTS' relationship with its host jurisdiction. Nye County aspires to strengthen its collaborative and economic relationship with NTS and requests that the final EIS reflect consideration of this opportunity for both of us. We would be pleased to share our data base, as well as participate in the development of a more detailed strategic plan for the preferred alternative.

3 We remain concerned that the water resources evaluation has been inadequate, appearing to rely on data from 10 to 30 year-old technology, inadequate modeling, and insufficient attention to the hydrology of the region down gradient from NTS - at least so far as we can tell from the DEIS. Amargosa Valley residents need assurances that the quality and quantity of their water resources will be protected for future generations.

COUNTY OF NYE • P.O. BOX 153 • TONOPAH, NEVADA 89049 • (702) 482-8191

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Nevada Test Site Draft EIS

Thank you for your attention to our comments. Please call me at (702) 482-8189 or Phillip Niedzielski-Eichner at (703) 818-2434 if you have any questions.

Very truly yours,

Les W Bradshaw

Les W. Bradshaw
County Manager

Enclosure

cc: Nye County Commissioners
Phillip Niedzielski-Eichner, Governmental Dynamics, Inc

NEVADA TEST SITE
DRAFT ENVIRONMENTAL IMPACT STATEMENT
Comments from Nye County, the Host Local Government
May 14, 1996

I. COOPERATING AGENCY STATUS

Nye County has appreciated the opportunity to participate early in the development of the Nevada Test Site (NTS) draft Environmental Impact Statement (DEIS) process. While we did not have the resources that we would have liked to devote to the effort, we believe that it is important to the future of the Test Site to foster and encourage positive partnerships.

II. PREFERRED ALTERNATIVE

4 Nye County supports all alternatives but the discontinuation of operationsThe County could support any of the alternatives except for Alternative 2 -- discontinued operations. The preferred alternative is the expanded use alternative or Alternative 3. However, to benefit the region, we believe that expanded use requires strategic planning and a more thorough consideration of impact issues and related mitigation measures.

III. WATER RESOURCES ISSUES

5 It is clear that there are potential adverse impacts on groundwater availability as a result of expanded use of the Test Site. In particular, the Solar Enterprise Zone will be a major demand on groundwater resources. The County seeks better information on any potential off-site impacts. In
6 addition, the County would like to better understand the extent to which development of the Solar Enterprise Zone could preclude or constrain the pursuit of some future ventures at NTS.

A. Dated Data Base

7 The main hydrology-related goal of Nye County is to protect the county's water resources. The information provided in the document with relation to the water resources and use are general and mostly reflect literature search and reviews. There is some brief mention of numerical modeling, but the specific reference is not provided. The numbers that are used to compare different alternatives also appear to have been driven from literature search. In order to provide a thorough review of such a document, all supporting documents and analysis need to be provided by DOE and ample time given for detailed review. Many of the statements made in the document appear to be mere assertion that cannot be substantiated.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

8 Analysis of a complex system such as the ground-water basins of the Nevada Test Site and vicinity requires sophisticated basin analytical tools. The tools available to us today are ground-water flow and solute transport models. We believe several such models exist for the study site, though they may not be properly calibrated. Once calibrated, they should be used to evaluate and compare the various alternatives that are being considered for the DEIS. These models should ultimately be used to optimize the selected alternative. The results of such an analysis being used in this DEIS are not evident.

9 Although the literature search and results provide valuable insight into the ground-water systems at the site, most of the values reported are based on 10- to 30-year old technology and the assumptions used for various basin may not be consistent. The DEIS estimates that 2.2 million acre-ft of groundwater is held in storage in the upper 100 ft of the saturated zone in Yucca Flat, Frenchman Flat, Mercury and Rock Valley, and Fourmile Canyon (Scott, et. al. 1971).

B. Water Availability

10 The DEIS suggests that this water is available for development of water supplies at NTS. For some of the alternatives, NTS requires a little less than 2000 acre-ft/yr. DEIS also estimates that there is 41,400 acre-acre-ft/yr inflow to NTS by under flow and upland recharge. The DEIS estimates that 42,000 acre-ft/yr. is discharged to Ash Meadows and Rock Valley. If these number are correct there is a small deficit in annual mass balance between recharge and discharge, with recharge being slightly less. Thus, in the absence of a plan for replenishment, any withdrawal will be mined. At 2000 acre-ft/yr with 600 acre-ft/yr natural deficit, 130,000 acre-ft will be mined out of the system.

11 The volume of 130,000 acre-ft is about six percent of the total volume estimated in the DEIS. As it is with any other ground-water basin, the total system does not contribute to the amount of water withdrawn. Therefore, there will be isolated areas that will experience substantial draw down. Such stresses on the aquifer might well result in migration of the existing plumes to non-impacted areas. Furthermore, withdrawal of good quality ground water will eventually result in deterioration of the overall quality of the ground water.

C. Future Public Use

12 The DEIS states that there are no known public use of the water at the NTS (p. 4-143, lines 28-33). This position does not account for future use of property bordering NTS or future development in the Amargosa Valley. Nye County is already experiencing the pressure of increased water demand from the Las Vegas Valley. NTS and the vicinity will soon become precious water resources areas. The DEIS does not address this reality.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

D. Containment Ponds and Sewage Lagoons

13 The impact of the contaminated containment ponds and sewage lagoons is underestimated. These ponds and lagoons must be lined or drained as soon as possible. The highly permeable nature of the material in which these ponds are constructed promotes rapid percolation of the contaminated water to groundwater system.

IV. SOCIOECONOMIC ISSUES

14 With respect to socioeconomics, the analysis projects no adverse impacts from any of the alternatives, although Alternative 2 would seem to result in adverse impacts. Although the report indicates that no mitigation measures are required, there are some supportive measures proposed
15 that the County endorses pursuing (Volume 1, Part B, p. 7-3, lines 21-25). We urge that the second bullet be modified to reflect a joint local, state and federal conference to promote a national and international environmental technology development center.

A. Description of the Affected Environment

16 The analytical methods used in the DEIS do not fully convey the relative importance of the facility to the economic, social and political fabric of Nye County nor the contribution of Nye County to the success of the NTS in meeting its mission. In Chapter 4, the document suggests that the Nye County contribution to the NTS is relatively small, and that the NTS represents a
17 relatively small part of the overall County economy. In Chapter 5, the document suggests that all negative impacts of the alternatives will be minimal and short-term in duration. In both cases, Nye believes that a complete description of the relationship between the County and the NTS will provide a more realistic assessment of the importance of NTS to the Nye County economy.

18 The document suggests the limited contribution of Nye County to the NTS by the fact that only seven percent of total NTS employees live in Nye County (p. 4-69, line 6). The DEIS suggests the limited role of NTS in Nye County by the assertion that it accounts for only six percent of total employment (by place of residence) in 1994 (p. 4-69, line 13). Neither of these statistics captures the true nature of NTS in Nye County.

19 In quantitative terms, over the past 44 years, the NTS has been consistently the largest employer in the County. The location of the NTS in Nye County has provided the nation with a valuable resource and has, to some extent, limited the County's ability to attract alternative or diversified
20 industries. For example, the Department of Defense's *Special Nevada Report* estimates that, if another economic activity (e.g., mining or grazing) had developed in the area currently reserved for NTS activities, total County employment could be 3% higher, gross regional product could be $180 million higher (in 1990 dollars) and personal income could be $37 million higher.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

21 Also, the facility has resulted in the need for greater levels of public services and facilities, and has to some extent identified Nye County as the nation's nuclear testing ground. For example, in the past, protests at the NTS have increased the need for public safety and judicial services provided by Nye County agencies. Also, protests and general news reporting of NTS activities have focused attention on Nye County as the site of radiation contamination, arguably the most publicly-feared form of environmental hazard.

Rather than protesting or contesting the location of NTS, Nye County residents and officials have willingly accepted their contribution to national defense and research. In part, this is because of the local familiarity with the facility and the relatively high salaries and wages paid for NTS jobs. But familiarity and higher wages do not fully explain the widespread support for the facility by Nye residents who receive no direct or indirect financial benefit from it. In a very real sense, the value of the NTS to the nation is a result not just of its remote location but also from the support it receives from the surrounding communities. In another location, the NTS's mission could be compromised or complicated by local opposition to its presence, or even by less active or less widespread support for its activities. It is widely understood that DOE could not find a willing host for a facility such as NTS in today's environmentally sensitive climate.

B. Local Responsibility for Emergency Management and Response

22 In addition to the on-site provisions for public health and safety described in the DEIS, the document should acknowledge and discuss the responsibilities of local emergency management and emergency response personnel for emergency preparedness, first-on-scene, first response and incident command in off-site incidents. In addition to the training requirements described above, it is important to consider and resolve issues regarding mutual aid, incident command and cleanup responsibilities for any off-site incidents in Nye County.

C. Alternative 2 Impacts

23 In addition to the description in Section 5.2.1.3 of the effects under Alternative 2 of a loss of jobs in the Nye County economy, the DEIS should also discuss the disproportionate impacts of reduced employment opportunities in an environment of declining average salary/wage income and relatively high unemployment in Nye County vis a vis the region and the state.

D. Museum Concept

The proposal to develop a Nuclear Test Museum is an excellent idea that Nye County supports and recommends consideration of locating the facility in the Lathrop Wells area. Nye County has already invested in this idea and has available a facility design, schematic drawings, and a scale model. The County would welcome the opportunity to work in partnership with DOE and private entities to develop this concept further.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

E. Decentralization of Public Finance and Public Services

24 The DEIS describes public finances and public services in terms of historical trends in levels and types of services, and in the costs of providing those services. This description, and the fiscal impacts associated with future actions, should note the current trend toward decentralization of government, and the resulting increase in obligations on local governments. For example, recent statutes and case law require increased supervision of landfill sites by local governments as well as increased standards for local jail facilities. This trend could result in a significant shift of services and expenditure obligations from federal and state government to local governments. Therefore, the projection of future costs of local government services should (at a minimum) acknowledge the trend toward increasing service costs.

F. Cumulative Impact Analysis

25 In Section 6.4, on page 6-14, line 1, it appears that text has been omitted from the first full sentence on the page ("Fiscal impacts to local jurisdictions . . . ").

G. Mitigation Measures

26 The DEIS should acknowledge the special relationship that has existed between the NTS and Nye County over the past four decades, through periods of expansion as well as periods of contraction. In addition, the contribution of the County and its communities to the success of NTS should be acknowledged by formal commitments of the U.S. Department of Energy to certain limited mitigation measures for alternative scenarios of current and future uses of the DOE facilities at NTS.

27 Section 7.3 of the DEIS states that "No adverse impacts are associated with implementation of any alternative for any socioeconomic issue (economic activity, population, housing, public finance, or public service); therefore, no mitigation measures are required." (p. 7-3, lines 17-19) This appears to conflict with the statement in Section 5.2.1.3 that "The loss of employment and personal income and the increase in unemployment associated with Alternative 2 would result in substantial short-term adverse effects to the regional economy; however, economic and natural growth in the region of influence is expected to compensate for these reductions over time." (p.5-102, lines 17-20) The mitigation section should acknowledge this impact, and describe mitigation measures appropriate to the impact.

From a broad perspective, Nye County believes that it is important to maintain the Nevada Test Site as a viable facility and, like many other interested parties, prefers greater emphasis on the expansion of research and development activities. However, it is clear that the Nevada Test Site is viewed as an ideal candidate for the disposal of low-level waste and low-level mixed waste, because of its relative isolation, arid climate, and deep groundwater table.

Expanded waste management operations at NTS may provide for the public safety at other sites, but would present extra risks and burdens to the County, and, therefore, the County should receive reasonable equity offsets to mitigate the potential impacts. These could include:

28
- Improvements in local health and education delivery systems
- Establishment of a trust fund to protect future generations
- Assistance for local emergency responders
- Preferential hiring of residents for DOE projects
- Directed procurement to host county business
- Training for local workers
- Consolidation of DOE and contractor offices in the host jurisdiction
- Preferential treatment in siting of other federal projects
- Establishment of energy and nuclear waste R&D facilities in the host jurisdiction

29 Also in Section 7.3, the provision for "a joint state and federal conference to promote a national and international environmental technology development center" (p. 7-3, line 23) should include the active participation of local government as well.

VI. TRANSPORTATION

30 With respect to transportation, if roads are expected to deteriorate, perhaps to unacceptable levels, by 2000, waste shipments will engender additional risks. Regardless of the source of the deterioration to the roads, DOE/NV will need to address these issues and contribute to mitigating the deteriorating conditions, particularly if the NTS and Yucca Mountain become prime destinations for waste. Moreover, if NTS becomes the central location for nuclear weapons

31 complex waste, rail access should be constructed.

A. Follow Through From Study to Decision and Implementation

The efforts of DOE/NV to involve stakeholders in meaningful discussion of transportation issues have been very useful (page 2-1 ff). The meetings of the Transportation Protocol Working Group, for example, have generated valuable discussion, resulting in action items for DOE and the stakeholders.

However, two reservations about this process must nevertheless be expressed. First, despite the valuable discussion and the action items for the NTS DEIS process, the substance of some of the stakeholder questions and concerns is not yet resolved, not yet negotiated among decision-makers at DOE and in the state and local communities. Valuable discussion regarding the NTS DEIS process cannot take the place of negotiation to resolve impact concerns and policy issues. Second, due to funding cutbacks, many of the stakeholders who were able to participate in 1995 are not able to participate in 1996. This jeopardizes the continuance of a forum which will be needed as decision about ongoing and future operations at NTS are made and implemented.

We advocate continued efforts by DOE and stakeholders to maintain an active forum for discussion and resolution of issues as the NTS decision process unfolds.

B. Limitations On Nts Transportation Issues Addressed

The NTS DEIS was undertaken in a policy context which required many topics potentially affecting NTS to be deferred to other agencies and other ongoing assessment processes. For example, the transportation of highly-enriched weapons-usable fissile materials has been addressed in the Defense Program Transportation Risk Assessment (page 1-8), and is being addressed in the Long-Term Storage and Disposition of Weapons Usable Fissile Materials Draft PDEIS (page 1-9). Transportation issues regarding shipments of spent fuel to Yucca Mountain are deferred to the Yucca Mountain DEIS, even though choices regarding Yucca Mountain affect the options and desirabilities regarding transportation to NTS. Issues regarding the possible

32 transportation of spent fuel and high-level nuclear waste across NTS to a centralized storage facility at NTS Area 25 are not considered at all, even though these prospects are as real as many others included in the NTS DEIS alternatives.

33 At minimum, the deferral to other agencies and processes makes the NTS DEIS confusing. It is not clear, for example whether the analysis of transportation risk under Alternative #3 includes potential Stockpile Stewardship responsibilities, shipments involving the Transportation Safeguards Division at DOE/AL.

34 At maximum, despite much good work included in the NTS DEIS, the preparation of an DEIS as a decision-making document may have been premature, since the NTS DEIS cannot consider the full consequences of the alternatives identified, particularly Alternative #3.1

35 It is recommended that DOE/NV should update the transportation analysis as decisions emerge from the Stockpile Stewardship, Fissile Materials, Programmatic Waste Management, and HLNW processes, to identify the number, source, routing, mode, and timing of all prospective shipments to NTS.

C. Concerns Not Addressed In Analysis Of Risk Probabilities

Though the study acknowledges that "risk is not the only concern in the transportation of radioactive materials and hazardous waste to the NTS" (page 1-10), it goes to substantial lengths to calculate the risks associated with low-level and mixed waste shipments, and to show that the risk probabilities of vehicle-related fatalities and injuries and incident-free radiation-induced fatalities are low.

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1 The transportation analysis of Alternative #3 (Tables C-33 through C-44) is limited to low-level and low-level mixed waste shipments.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

1. Risk Perceptions and Potential Impacts

36 The study does not address the "other concerns," either from an analytic or policy perspective. These include risk perceptions and the concern that prolonged large-scale shipment campaigns could affect growth patterns and property values. Even if waste shipment campaigns, in and outside Nevada, are entirely incident-free, this is a major concern. In combination with incidents or accidents it could become a major concern and a political and economic reality. These concerns should be addressed, even in the constrictive DEIS format.

2. Projected Service Levels, Traffic Volumes and Adjacent Populations

37 While we acknowledge the several conservative assumptions used in the calculations of population dose estimates in incident-free transportation (page C-13, 14), we nevertheless question whether the estimates adequately reflect the projected decline in service levels and the projected increase in traffic volumes and population (residents, visitors, and workers) in areas adjacent to relevant segments of I-15, US-95, and US-93.

D. Rail Access To NTS

1. Rail Access Required or Desirable in Another Context

38 The NTS DEIS states that "The only credible alternative to *require* rail access directly to NTS is one in which NTS would be the sole low-level waste disposal site for the DOE complex (Alternative 3)" (page 2-14, emphasis added). The implications of this statement are not made clear. It is the conclusion that Alternative 3 would require the development of rail access for shipment of low-level wastes, regardless of the requirements associated with stockpile stewardship materials, weapons usable fissile materials, high-level defense wastes, and/or spent nuclear fuel? If required, is it DOE's position that rail access would be used for all shipments into Nevada, or only as a supplement or alternative for truck shipments?

2. Contortions in Considering NTS Rail Access

The NTS DEIS is very contorted in its efforts to address rail access options while avoiding policy positions and leaving the initiative for decision and implementation with another agency of DOE, which is dealing with an adjacent site under different funding arrangements. While we have some understanding and empathy for the contortions, they do not take the place of direct negotiation and commitment among parties in a position to make and implement policy decisions.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

3. The Comparison of Costs and Risks of Truck and Rail Modes

39 While the NTS rail access study compares "the (estimated) costs of shipping by truck, rail, and intermodal modes" (page 2-14), the NTS Transportation Study points to a current evaluation by DOE/ID of the costs and risks associated with alternative modes of spent nuclear fuel transportation, including intermodal and rail options (page 1-6).

We believe that the cost and risk basis for decisions between truck, rail, and intermodal transportation options (for spent fuel, low-level and other waste shipments in Nevada) has not been fully considered or presented on an integrated basis. Such an evaluation should be developed as a basis for future use decisions at NTS, including NTS Area 25 and Yucca Mountain.

E. The Barriers To First Responder Training In Rural Communities

40 During the NTS DEIS process, rural communities including Nye County repeatedly expressed the need to provide and maintain first responder and first-on-scene training for fire, law enforcement, and emergency medical responders, emphasizing the barriers for largely-volunteer rural services in accessing this training, and the need for innovative solutions (including funding) involving DOE/NV, DOE/YMSCO and rural service providers. The NTS DEIS limits its response to a statement that "The DOE is working with rural response forces to schedule training that volunteers can attend" (page 2-11), but it does not address the substance of the barriers or the adequacy of its own limited response to deal with the issue. The issue remains and it should be addressed at policy-making levels in DOE/NV, DOE/YMSCO and affected local governments.

VI. DEFENSE PROGRAMS

41 The Conventional Weapons Demilitarization program has the potential of ultimately involving disposition of 3 million tons of weapons/explosives. We would be interested in a more comprehensive assessment of the County impacts of such a program.

VII. FRAMEWORK FOR NTS RESOURCE MANAGEMENT PLAN

Nye County is pleased to note that many of its comments on the preliminary draft framework were incorporated in this version, but we still want to underscore our suggestion regarding a joint planning process. In addition, there is some language regarding the community reuse organization that has been included since the July predecisional draft (our last opportunity for input) which poses some concern. We also want to take the opportunity to comment on how DOE might engage local government and the public in the development of the resource management plan over the next few years.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

On p. 4-8, lines 29-30, the framework notes, "To the extent consistent with its missions, the DOE/NV will cooperate with land-use plans and policies of local governments such as Nye County." We support such cooperation but believe it must go a step further. As we have noted before, Nye County has adopted a comprehensive plan, a transportation plan, a solid waste management plan and an overall economic development plan. Nye County is also in the process of considering regional land use plans and ordinances. To best achieve our respective and mutual goals, we recommend that Nye County and DOE/NV conduct a joint comprehensive planning process.

42 In a few different sections (note especially p. 1-3, lines 6-8; and p. 2-3, lines 24-26), the community reuse organization (CRO) is referred to as "the community's single voice to the DOE/NV for economic development." While Nye County appreciates the potential role of the CRO, we also believe that the CRO, as constituted, cannot serve as a single voice for the "community." Of the approximately 60 members, only one represents Nye County government, the first jurisdiction of the NTS, while Clark County is well represented. The economic development issues and impacts are very different for our two jurisdictions, as you note in the description of the region of influence for the DEIS (Volume 1, Part A, p. 4-69, lines 10-14): "Analysis of economic activity impacts in the region of influence of Clark and Nye counties is accomplished separately for each county."

The differences in size, economies, and contributions would produce a misleading analysis if both were analyzed as one aggregate area. For example, in 1994, the NTS accounted for 1 percent of total Clark County employment, as contrasted with 6 percent of total Nye County employment." Further, on p. 4-74, lines 5-7, the report states: "Rural economies, such as Nye County, however, often leak large portions of both business and residential purchases to larger communities, resulting in economic loss and a set of economic development needs different from those in more urban areas."

43 In the framework document, DOE has solicited input regarding what partnerships might be formed with different entities and how to best involve the public and local government, among others. We offer the following recommendations for public involvement:

- DOE/NV should make regular and direct contact with private landowners within at least a 50-mile radius of the Nevada Test Site to inform them of the process and to solicit their input. Particular attention should be given to the residents of Amargosa Valley, the community closest to the Test Site.
- DOE/NV could test some public information and involvement approaches beyond public meetings, including the use of special NTS tours, newspaper inserts or articles, and schools. The public meetings could benefit from professional facilitators to elicit values.

MUNICIPAL GOVERNMENT 10 (CONTINUED)

44 With respect to local and state government participation in the development of the resource management plan, we recommend that an intergovernmental working group be established. At a minimum, the group would be composed of representatives from Nye County, Clark County, Lincoln County, and the State of Nevada, and would have working meetings with DOE/NV on a monthly basis or perhaps more regularly during peak development periods.

45 Specifically, with respect to a partnership with Nye County, we recommend that DOE/NV take the following approach:

- Establish a framework for formal interactions process between Nye County and DOE/NV, comparable to the agreement between the Yucca Mountain Project and Nye County. This process is characterized by regular interaction, senior management involvement, and documentation of discussions. This agreement would cover the wide range of DOE/NV issues, including the development of the resource management plan.
- Regularly interact with Nye County through the intergovernmental working group, but use the formal interactions process to resolve issues unique to Nye County that are not appropriate for or cannot be resolved in the working group.
- With respect to the resource management plan, DOE/NV officials should plan to brief the Nye County Commission at least twice a year, at its regularly scheduled meetings, on the progress and direction of the RMP development.

46 Nye County views the NTS as a unique outdoor laboratory, ideally suited to research, development, and testing (broadly speaking). Nye County's philosophy regarding resources on the NTS is that they be used in a way that supports the missions articulated in Alternatives 1, 3 and 4 to the greatest extent possible. We place high value on most of the resource issues listed in Table 2-1, but the number one resource issue is minimizing risk to the health and safety of workers and the public. (Note that the definition of health and safety on p. 2-2, line 7, should be modified by adding to the end of the sentence: "or the public.") To the degree that it is or becomes consistent with the national security demands of NTS missions, Nye County is interested in exploring the potential commercial value of geological and mineral resources.

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COMPANY 1

Corporation for Solar Technology and Renewable Resources

Rose McKinney-James
President & CEO

Corporate Officers:
Honorable Richard H. Bryan
Chairman
Peter M. Thomas
Secretary / Treasurer

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April 4, 1996

Mr. Donald R. Elle
Director, Environmental Protection Division
U.S. Department of Energy, Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114

Dear Mr. Elle

I have reviewed your draft Environmental Impact Statement for the Nevada Test Site and Off-Site Location in the State of Nevada and attended your recent workshop meeting held in Las Vegas on March 26th. As you know, given DOE interest in solar development it was deemed necessary to include prospective Solar Enterprise Zone (SEZ) sites in the scope of work undertaken in the EIS. In addition to providing comments to your staff on various sections of the draft statement volumes, I thought it might be useful to provide a general description of how the SEZ initiative has matured during the last eighteen months. This information should be considered as you make final adjustments to the EIS documents and move toward publishing the record of decision. 1

The Corporation for Solar Technology and Renewable Resources (CSTRR) has made significant progress relative to the development of a Solar Enterprise Zone in Southern Nevada. For example, we now have a better vision of the electrical capacity, solar technologies and preferred sites that are likely to be involved in the initial projects. Some of these advancing issues could influence representations that you make in the draft EIS particularly regarding acreage requirements and water usage and their impact upon local plants and animals. 2

The SEZ is the product of efforts undertaken at the request of US Senators Richard Bryan and Harry Reid to promote and establish a mechanism for the development of renewable resources within the State of Nevada. More specifically, Senator Bryan expressed an interest in the development of solar energy as an alternative use for the Nevada Test Site. With the support of the Department of Energy, a SEZ Task Force comprised of business, community and government leaders convened to outline a strategy for the expansion of the concept. In early 1995, the Corporation for Solar Technology and Renewable Resources was formed. CSTRR is currently funded through a $3 million grant from the Department of Energy. These funds are intended to

COMPANY 1 (CONTINUED)

be used exclusively to support the development of CSTRR and its mission. The grant funds are not intended to be used to support the actual costs of construction.

The SEZ initiative has been undertaken in an effort to encourage and promote private investment in solar energy. Consequently, significant industry and public interest has been expressed in the development of solar power within the zone. It is important to note that the Task Force specifically determined that the Nevada Test Site represents a significant solar resource with the potential to develop more than 100 MW of solar powered energy generation. 3

The mission of CSTRR is to promote the development of this renewable resource for commercialization. CSTRR is to coordinate and facilitate the assistance of a variety of federal, state and local supports to establish a self sustaining solar resource within the SEZ. In an effort to move this process forward, CSTRR issued a RFP in mid-1995 to identify potential developers willing to construct solar power projects within the zone. The Corporation hoped to draw developers with sound technologies, financial strength and projects with the strongest potential for commercial success. As a result of the process, 14 proposals were submitted. After a comprehensive review and evaluation of these projects by a selected panel of experts, the proposals were narrowed down to four. The four projects which were selected for initial development represent a variety of technologies and preferred sites within the zone, including both on and off-site locations. Collectively, these four projects represent almost 300 MW of electrical generation. Additionally, each project includes a manufacturing component that provides a tremendous opportunity for economic development for the State of Nevada. 4

The four projects selected by the CSTRR Board of Directors are summarized in the enclosed project summary. Two of the four proposals indicated a preference to develop their project at the Nevada Test Site. Regardless of their preferred site, it is anticipated that each project will select a site that best meets their technical requirements while minimizing environmental impacts. For example, it is not likely that solar technologies 5 requiring significant wet cooling will be situated at the Test Site or other locations where 6 water supply is a problem. While it may be too early to determine specific impacts, it is anticipated that there will be some environmental disruption from the construction of the 7 power generating facilities in spite of best efforts.

It is anticipated that the actual construction costs will be paid by project participants. Project developers will be eligible to apply for tax exempt bond financing through CSTRR as a result of its corporate non-profit status. It is therefore anticipated that the cost of any environmental mitigation would also be the responsibility of the project developer.

Given the significant historical investment that the DOE has made in renewable energy, particularly solar energy sources, there certainly exists the possibility of future 8 DOE involvement in a SEZ/CSTRR project. Currently there are no specific plans or proposed projects which anticipate DOE equity participation at this time.

At present, CSTRR technical staff has scheduled meetings with the four project developers to further negotiate various details of each proposal. This process should be completed in June of 1996. Also, efforts are continuing to establish markets for the

COMPANY 1 (CONTINUED)

power to be generated by the initial projects and the form and conditions of power contracts. Initially, the targeted market is limited to DoD and DOE federal facilities and Native American loads that are presently situated in high rate areas. Additionally, CSTRR anticipates competing for approximately 50 MW of solar power that has been offered through an RFP issued by SMUD.

9 The SEZ/CSTRR long term goal remains to facilitate the construction and operation of up to 1000MW of solar generation in the Southern Nevada zone. At present our most likely scenario suggest that no more than 300MW would be located at any one site among those investigated in your draft document. Considering all factors now apparent, including technical, marketing and environmental issues, the Eldorado Valley site 10 appears to be more suitable for a larger component of generating capacity with smaller generating facilities at some combination of the other sites. This may help you focus your concerns regarding acreage and water requirements at each site. The light industrial manufacturing infrastructure contemplated would most likely be located in 11 Henderson or Boulder City at existing facilities where little or no environmental impact is expected; however, significant employment and economic development should result.

I hope that this provides you with a better understanding of the current status of the SEZ/CSTRR effort. If you have any questions or require further clarification, please feel free to call.

Sincerely,

Rose McKinney-James, President

RMJ/pc
Enclosure

cc: Bob Golden
Earl Hodge

COMPANY 1 (CONTINUED)

CORPORATION FOR SOLAR TECHNOLOGY AND RENEWABLE RESOURCES

AMOCO / ENRON

Technology:	Solarex thin-film photovoltaic modules
Project:	100 MW, long term contracts installed in roughly 10MW increments.
Local Economy:	Will locate manufacturing facility if they receive a 100 MW contract. Open to negotiations for smaller projects.

CUMMINS POWER GENERATION, INC.

Technology:	DISH STIRLING. Solar Thermal, heat is absorbed and used to drive free floating piston.
Project:	1MW, has also amended to include a 50MW second stage project.
Local Economy:	Under the 50MW proposal, a manufacturing facility to fabricate the dish structure and glass mirrors will be located in southern Nevada by 2003.

KENETECH CORPORATION, PHOTOVOLTAICS INTERNATIONAL, SOLAR CELLS, INC

Technology:	Wind blended with 2 (potentially 3) separate photovoltaic technologies.
Project:	100MW's, 40MW's of solar with 60MW's of wind.
Local Economy:	Solar Cells, Inc. to locate manufacturing facility in Southern Nevada. Tentative commitment to manufacture PVI receivers as well.

NEVADA POWER, ENTECH INC., SAIC

Technology:	Photovoltaic Concentrator Technology blended with Nevada Power wholesale power or wind. (Project is being resubmitted.)
Project:	20MW's of solar with variable blended power.
Local Economy:	Will locate concentrator assembly in Southern Nevada. Estimated 200 jobs.

Corporation for Solar Technology and Renewable Resources
6863 West Charleston Boulevard, Las Vegas, Nevada 89117 (702) 869-3610

COMPANY 2

NEVADA NUCLEAR WASTE TASK FORCE, INCORPORATED

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4550 W. Oakey Blvd.
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Las Vegas, NV 89102
702 248-1127
FAX 702-248-1128
800-227 9809

April 4, 1996

Donald R. Elle, Director
Environmental Protection Division
U. S. Department of Energy
P. O. Box 14459
Las Vegas, NV 89114

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NEVADA TEST SITE

In this Draft Environmental Impact Statement there are four proposed alternatives, but none is listed as preferred. The introduction of the document states that "... DOE will issue a Record of Decision that explains all factors considered in reaching its decision and specifies which alternative or alternatives are considered to be environmentally preferable." And in the section where the alternatives are described reviewers are told "[t]he use the DOE ultimately selects, however, may not be one of the alternatives in its entirety, but rather a hybrid created by selecting specific options from among the various alternatives." As with several of the EISs now underway, critical public comment on alternatives is of questionable value because DOE's stated intention is to select a "hybrid." To do an effective evaluation of any proposed action, the commenter must have complete and clearly defined details, and know that the action, as stated, is a viable option. To have DOE pick and choose pieces from the various alternatives to create a "hybrid" puts public participants at a serious disadvantage and weakens the effectiveness of their involvement. 1

The Nevada Nuclear Waste Task Force has presented, conducted, and attended many public meetings where nuclear issues are discussed. We have heard repeatedly from public audiences that there is enthusiastic support for solar development at NTS. Some of the alternatives discussed in this document include options for solar development but the sites suggested are not under the control or authority of the DOE. This leaves the impression that DOE's intention to pursue this option is disingenuous. 2

There is also public demand for stabilization and cleanup of contamination at NTS that could potentially risk public health and safety and the environment. Citizens in Nevada and adjoining states are adamant about the need for extensive, effective cleanup. It is the opinion of this commenter that all possible alternatives must include this action, whether in conjunction with other activities or not. 3

COMPANY 2 (CONTINUED)

It is well understood and documented that past activities at the Test Site have resulted in serious damage and continuing risk to neighboring populations. The media has reported from public meetings where many speakers demanded shutdown and cleanup of the site. This should, in fact, be listed as a "no action" alternative. DOE was quoted in those reports as saying that such an option would not be adopted. The term "no action" as applied to the option in the document is a misnomer. 4 5

This draft, with no preferred alternative, options that are totally unacceptable to DOE itself, and suggested actions that DOE has no authority to carry out is flawed to the extent that it cannot be effectively reviewed. If there is a sincere desire for public participation and insightful review, a new draft should be issued. 6

The EIS process is one of the few opportunities for the public to participate in the formulation of policy decisions that affect current and future populations. When the draft document is flawed, citizen involvement is ineffectual. The result is frustration and declining or further fortified distrust toward the federal agency and its decision - especially in matters where public health and safety are, or should be the highest priority. 7

Submitted by,

Judy Treichel

Judy Treichel
Executive Director

COMPANY 3

CEDAR STRAT

Silver Canyon Ranch
Hiko, NV 89017
(702) 725-3500

April 16, 1996

Dr. Donald R. Elle
EPA Division, DOE Nevada Operations
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle,

Following are my comments and questions concerning the *Draft Nevada Test Site Environmental Impact Statement.*

1 In Volume 1, Chapter 4 lines 16 and 17 the draft states: "....*the NTS is probably the geologically best known large area within the United States.*" I am interested in who made such a sweeping statement and on what basis was the statement made. Since access to the geology of the NTS and surrounding Nellis Range has been highly restricted, independent review by the geologic sciences has been precluded. Your people told me that the draft was made by reviewing peer-reviewed papers of the geology of the area. If

2 the geological community is restricted from scrutinizing geological observations and interpretations by federal geologists or geologists under federal contracts, how can there be an impartial, independent review of the geology there? If it is truly the *best known large area* then there should be reports on sequence stratigraphy, balanced structural cross sections, and

3 other state-of-the-art papers available. Since I saw no reference to modern stratigraphic and structural analysis, I suspect they are not available and/or not completed for the Nevada Test Site. If that is true, then you will need to rewrite lines 16 and 17 as: "*the NTS is probably the geologically least known large area within the United States.*

4 On page 4-100, lines 21 and 22 there is a reference to a generalized stratigraphic column for the area in the vicinity of the NTS. Is there a detailed stratigraphic column available? Who did it? Have the stratigraphic sequences been defined and how do they correlate to other sections in the region? What sequences in the stratigraphic column are part of the regional, Paleozoic carbonate aquifer? I saw no references to regional karst intervals or other porous and permeable sequences in the draft.

5 Is there someone working on the Paleozoic sequence stratigraphy of the NTS as it relates to groundwater aquifers, hydrocarbon reservoirs or ore host rocks? If not, will it be done for the final EIS? How can accurate statements be made about groundwater, hydrocarbon and ore deposits be made if this basic

6 work is not complete? If it is complete, where is it available for independent review? Who did the work? Does the worker(s)

COMPANY 3 (CONTINUED)

6 cont. have experience with carbonate sequence stratigraphy in Nevada? Have at least a doctorate degree on sequence stratigraphy?

7 Scored at least 90% on the GRE Exams? Have at least 10 years experience in oil and gas experience? Did they generate surface gamma-ray logs with their stratigraphic sections?

8 On page 4-100, lines 28 and 29 there is no explanation of how compressional deformation rearranged the positions of the Paleozoic rocks and what the implications of the rearrangement has on groundwater and possible extractive minerals including oil and gas.

9 No reference was made to how the Mississippian foreland basin sediments vary between structural plates on line 29, page 4-100. Is there detailed measured sections available with tight biostratigraphic control for the Mississippian sediments. Where are these sections available for review?

10 Is there evidence that the strike-slip faults mentioned on line 2, page 4-103 are related to tear faults during the Mesozoic compression event? What evidence is there suggesting there is no relationship? Has there been a detailed sequence stratigraphic analysis been made to compare and contrast the stratigraphy on both sides of the faults? If not, why not? If so, where is the

11 detailed data available for independent review? Where is there a discussion of how these faults control groundwater flow and hydrocarbon and hydrothermal fluid migration?

12 On page 4-104, line 2, there is reference that the Eleana formation is thought to be bounded by faults. What kind of

13 faults? What thrust sheet is the Eleana Range and Frenchman Flat

14 in? How can an accurate evaluation be made on the contamination of the groundwater in the regional carbonate aquifer be made if there is no reference to what structural plate is involved in the tests? How can there be a remedy to groundwater contamination if

15 the perched water tables are all that are being tested for regional groundwater contamination while the deep carbonate aquifer is unmonitered?

16 Figure 4-24, page 4-112 shows no reference to thrust faults in the NTS. Is there a reason why thrust faults have been

17 overlooked? Have the thrust faults been mapped? Has the stratigraphy between hanging wall and footwall plates been compared and correlated? If not, why not? If so, where is the data for independent review?

18 Where is the data concerning the thermal maturity for oil and gas mentioned on page 4-120. Who did the sampling, analyses, and evaluation? Was he (they) certified petroleum geologists with

19 experience in oil and gas exploration? If not, why not? Line 18 states that potential source rocks have low organic carbon and hydrogen indices. Where is this data available? Who generated

COMPANY 3 (CONTINUED)

19 cont. the data. From which structural plate were the samples taken? From what sequences were the samples taken? What parameters where used to conclude the low potential for hydrocarbon resources for the region? Who made the conclusions? Was the person a certified petroleum geologist? Were all tests in the NTS logged by independent certified petroleum geologists? What experience did personnel have who logged tests? How can the hydrocarbon potential of the region be determined if there has been no evaluation by independent, experienced, oil exploration personnel? Will an evaluation be made before the final EIS?

20 I will provide additional questions and comments before May if I have more time.

21 Sincerely,

22 Alan K. Chamberlain
President

23

COMPANY 4

KISTLER
AEROSPACE CORPORATION
3834 T Street N.W. • Washington, D.C. 20007 • 202 337.9463 • Fax 202 337-3639

May 2, 1996

Mr. Donald R. Elle
Director
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
2753 South Highland Drive
Las Vegas, Nevada 89193-8518

BY FAX AND FEDERAL EXPRESS

Re: Comments on Draft Environmental Impact Statement for Nevada Test Site

Dear Mr. Elle:

Enclosed please find the comments of Kistler Aerospace Corporation, of Kirkland, Washington, on the draft Environmental Impact Statement issued for comment by the U.S. Department of Energy in January 1996.

Thank you for your attention to this matter. Please contact me if you have any questions or comments.

Very truly yours,

Robert L. Meuser
Chief Regulatory Counsel

Before the
Nevada Operations Office,
U.S. Department of Energy

Comments
on
Draft Environmental Impact Statement

U.S. Department of Energy
Nevada Test Site

Robert L. Meuser
Chief Regulatory Counsel
Kistler Aerospace Corporation
3760 Carillon Point
Kirkland, WA 98033
206-889-2001

May 2, 1996

COMPANY 4 (CONTINUED)

Comments
on
Draft Environmental Impact Statement

U.S. Department of Energy
Nevada Test Site

Kistler Aerospace Corporation of Kirkland, Washington ("Kistler Aerospace"), files these comments on the Draft Environmental Impact Statement (DEIS) issued by the Nevada Operations Office of the U.S. Department of Energy (NV/DOE) in January 1996.

Kistler Aerospace supports Alternative 3 set forth in the DEIS. Kistler Aerospace respectfully urges NV/DOE to reference the testing and operation of a fully reusable aerospace vehicle by Kistler Aerospace at the Nevada Test Site under Alternative 3, the environmental effects of which are considered in the DEIS.

Section 1. Statement of Interest

Kistler Aerospace has entered into discussions with the NTS Development Corporation of Las Vegas, Nevada ("NTS Development") toward use of the Nevada Test Site for purposes of fabrication, testing, ground support and flight operations of a fully reusable aerospace vehicle. NTS Development has been designated by the Department of Energy as a Community Reuse Organization for the Nevada Test Site.

Kistler Aerospace is participating in a project team chaired by NV/DOE. Members of the project team include NTS Development, the Federal Aviation Administration and the U.S. Air Force. Kistler Aerospace will work closely with local, state and federal officials to develop the Nevada operations center.

The NTS site will allow Kistler Aerospace to deliver satellites to all projected orbits for the telecommunications and other low earth orbit satellite constellations now in development. The Nevada site will permit Kistler to serve its commercial satellite customers conveniently from a U.S. location offering comprehensive logistical support. Kistler Aerospace projects that operations from the Nevada site will increase to roughly two flights per month in 2001-2, and could exceed four flights per month by 2004-5.

Kistler Aerospace and NTS Development also will explore with Kistler's contractors the prospects for locating vehicle fabrication facilities at the Nevada Test Site.

If the K-1 airframe can be fabricated and the K-1 vehicle assembled at the NTS Development site, Kistler's transportation costs and barriers will be reduced substantially.

Kistler Aerospace anticipates that its operations will help to increase employment and diversify the economy in southern Nevada. Kistler expects these economic benefits to flow not only from Kistler activities directly, but also indirectly from Kistler's contractors and customers as they support their Kistler-related activities.

Section 2. Description of Kistler Aerospace's Proposed Activities at the Nevada Test Site

2.1. Kistler Aerospace's operating strategy

Kistler Aerospace intends to operate a space delivery service using a fleet of three K-1 aerospace vehicles consistent with the principles used by commercial air carriers generally and air freight delivery services particularly.

The K-1 will be a two-stage vehicle, comprised of the Launch Assist Platform (LAP) and the Orbital Vehicle (OV). *Each stage* will be *fully reusable* and uses well-characterized technologies. Like modern aircraft, the K-1 will be organized around modular, line-replaceable units (LRUs) for each vehicle system to increase reliability and facilitate maintenance.

K-1 systems and components have been selected to take advantage of technologies that have already proven themselves in aerospace applications. In most cases, the hardware that makes use of these technologies has a documented flight history, and, in many cases, is available off-the-shelf.

2.2. Ground handling, facilities and support

Kistler Aerospace plans to construct its assembly and routine maintenance facility at the launch site. The assembly building will be a simple hanger with room for work on two vehicles and basic amenities. Kistler Aerospace will perform assembly of the K-1 vehicle and its payload, pre-flight check, and routine maintenance at this facility. The assembly facility will provide isolated clean rooms for each of four payloads for check-out prior to launch.

The K-1 will use a mobile strongback, or launcher, for three operational functions. The launcher first will serve as the assembly platform for the K-1 vehicle and its payload. The launcher secondly will convey the K-1 vehicle from the assembly facility to the launch pad, and then erect, fuel and launch the K-1, in approximately four hours. This mobile device is similar in concept to the transporters in use at Russian and Kazakh operational launch sites.

Kistler intends to construct a basic flight facility, including modest buildings, a pad, roads leading to the pad, and a dry well for exhaust. These facilities are expected to require less land area and involve less construction than construction of an airport.

After erection at the pad, the K-1 will be loaded with propellants and pressurants by commercial tank trucks feeding through the launcher. Battery charging voltage will be supplied from the self-contained power supply on the launcher. The fueling will take approximately four hours.

Kistler Aerospace selected Russian RD-120 LOx/kerosene engines because they offered the highest performance and reliability of any of the available engines. The RD-120 has been fired 484 times, accumulating 118,000 seconds of operation time - a substantial amount for a rocket engine. Since its inception, 151 RD-120 engines have been built.

The RD-120 engines use RP-1, a more refined form of kerosene. The low volatility of RP-1 as compared to liquid hydrogen makes for safe and easy fueling operations since spilled or leaked fuel will not spontaneously ignite. Safe fueling procedures for RP-1 are well-established after 30 years of use in Titan and Delta expendable vehicle launches.

2.3. Flight operations

After launch, the first stage, or LAP, will boost the orbital vehicle to approximately 40 km (130,000 ft), an altitude and a velocity sufficient for the OV to fly into orbit. The LAP then will separate, rotate and re-ignite its engine for automatic return to the launch site. Separation along any planned azimuth of flight will occur within the restricted airspace surrounding the Nevada Test Site.

Upon separation from the LAP, the OV will ignite its engines and lift into its orbit. The K-1 will be at least 270,000 feet in altitude along any planned azimuth of flight at the point in flight when the K-1 will cross out of the FAA restricted airspace surrounding the NTS.

The OV will deliver its payload after achieving orbit, and then will remain in orbit until the proper time to fire its single main engine for re-entry. The standard 480 kilometer circular orbit will permit re-entry within 12 twelve hours of launch. The OV then will re-enter the earth's atmosphere, and will return to its launch site in an autonomous precision landing maneuver.

Upon re-entry, the K-1 orbital vehicle will be at least 140,000 feet in altitude when it enters the restricted airspace surrounding the NTS. This relatively steep ballistic re-entry path will enhance the targeting of the K-1 re-entry.

The K-1's avionics system is being designed with built in health monitoring capability. This allows the replacement of any unstable component before it fails. In so doing, it enables better maintenance and refurbishment programs, thereby increasing reliability.

In the event of an in-flight engine emergency during boost phase, the K-1 can continue flying to a pre-designated diversion site for a safe landing with its remaining engines. After staging, a fuel dump system enables the OV to jettison its fuel load and reach a pre-designated diversion landing site.

The K-1 will have completely redundant avionics so that the vehicle can tolerate the failure of any part of its navigation and guidance systems and continue the flight. Like an aircraft, the K-1 will carry equipment for monitoring position and velocity compatible with Federal Aviation Administration (FAA) requirements for aircraft.

K-1 avionics consist of proven technology with well-documented flight histories. The inertial measurement unit has a documented Mean Time Between Failure (MTBF) of five years of constant operation. The flight control computer has a documented MTBF of four years in continuous operation.

The final landing sequence for both the LAP and OV will use parachutes and airbags. The K-1's parachute and airbag landing system takes advantage of extensive military development. This heritage insures that the K-1's landing systems will perform as designed, and safely land the LAP and OV in nominal and diversion site landings.

The K-1's landing systems remain intact and operable throughout its flight sequences. A barometric sensor deploys the parachutes and airbags insuring a controlled, intact landing at a pre-designated diversion site in the event of an emergency landing. Both the LAP and OV can be recovered, serviced, and, after determination of the cause of any failure, re-inserted into the fleet.

The operation of any vehicle in navigable airspace is subject to licensing, certification, safety restrictions, and operating restrictions imposed by the Federal Aviation Administration of the U.S. Department of Transportation (FAA). Kistler Aerospace will comply with all applicable FAA requirements in its testing and flight operations.

2.4. Recovery and turnaround

When the LAP and OV land on their airbags, recovery vehicles will be dispatched to retrieve each vehicle from the landing zone. The recovery vehicle will use a hoist to lift the LAP and the OV onto the flat-bed recovery vehicle for transport back to the hangar. Once in the assembly facility, the LAP and OV will be transferred to the launch system, which will re-enter the hangar to begin a new maintenance cycle. If the operating systems of the LAP and the OV prove nominal, the first and second stages will be mated, checked out, integrated with payload, and ready for flight in 3 days.

If the LAP or OV are not ready for flight, the modular construction of the K-1 will permit repairs at the assembly hangar by replacement of the inoperable system. Kistler Aerospace will maintain spare replacements for all systems. Maintenance will *not* be performed on system modules at the assembly facility. Rather, malfunctioning system modules will be removed from the K-1, replaced by spares, and returned to the relevant contractor for refurbishment or repairs. The K-1 will use proven technology and minimum number of system modules to assure reliability.

2.5. Test Flights

Kistler Aerospace plans to conduct six or more test flights from its operations center. The first three test flights of the Kistler K-1 will be suborbital and wholly within the confines of the Nevada Test Site and the airspace over it. The next three test flights are planned to be orbital flights, with or without payloads, as described above.

2.6. Manufacture of Airframe

Kistler Aerospace will contract the manufacture of the airframe for the K-1 vehicle. The airframe will consist of composite material. The dimensions of the airframe may restrict transport of the airframe to the flight operations center. As a consequence, Kistler intends to invite the airframe manufacturer to locate a composite material fabrication facility at or near the site of operations.

If Kistler's airframe contractor has an interest, Kistler Aerospace will work with the manufacturer and NTS Development toward locating fabrication facilities at the Nevada Test Site.

Section 3. The DEIS Encompasses Kistler Aerospace's Contemplated Activities at the Nevada Test Site

The DEIS issued by NV/DOE encompasses the environmental effects of Kistler Aerospace's contemplated activities at the Nevada Test Site.

3.1. Kistler Aerospace's Contemplated Activities at the Nevada Test Site

Kistler Aerospace contemplates the following activities at the Nevada Test Site:

- Construction of assembly building, manufacturing facility, flight operations pad and support buildings, and associated infrastructure on NTS land.
- Manufacture (possibly) of composite airframe on NTS land.
- Ground support, including transport, fueling, take-off, landing, and recovery on NTS land.

- Flight operations in NTS airspace.

3.2. The Environmental Effects of these Activities Are Addressed in the DEIS

The environmental effects of Kistler Aerospace's contemplated activities are addressed and evaluated in the DEIS. In evaluating these activities, NV/DOE should focus on the environmental consequences of activities, not on the activities themselves. *See Village of Grand View v. Skinner*, 947 F.2d 651, 657 (2d Cir. 1991)("whether the change will affect the ... environment in a significant manner or to a significant degree not already considered in previous studies").

Kistler Aerospace's contemplated activities fall within the classes and kinds of environmental effects considered in the DEIS, and thus are addressed in the DEIS:

Contemplated Kistler Activity	DEIS Coverage
1. Manufacturing (possible activity)	As part of Alternative 1 (No Action) and Alternative 3 (Expanded Use), land use zoning at the NTS envisions industrial use, including manufacturing. Alternative 3 contemplates pursuit of new private initiatives at the NTS. NV/DOE specifically contemplated a "large, heavy industrial facility" under Alternative 3 (at A.1.3.5).
2. Construction	Construction and maintenance of facilities and infrastructure are contemplated as part of Alternative 1 and Alternative 3.
3. Flight operations	Flight operations of various aircraft and missiles are contemplated as part of Alternative 1 and Alternative 3. The LOx/kerosene fuel to be used by the K-1 aerospace vehicle is comparable in environmental implications to other fuels. Alternative 1 and Alternative 3 contemplate spill testing and other testing of hazardous materials.
4. Ground support	Alternative 1 and Alternative 3 contemplate landing by aircraft, ground impact by weapons, and testing of explosive devices.

This conclusion is shared by the Desert Research Institute, which compared Kistler Aerospace's contemplated activities with the DEIS. The Desert Research Institute evaluated the environmental consequences of Kistler's contemplated activities element by element. For each element, the Desert Research Institute concluded that the DEIS evaluated the environmental implications of Kistler's contemplated activities. The Desert Research Institute report is attached as Appendix A.

3.3. Kistler Aerospace's Contemplated Activities Should be Covered in the Site-Wide EIS

Kistler Aerospace's contemplated activities should be addressed in the site-wide environmental impact statement in preparation. The DEIS attempts to address comprehensively future alternatives and uses of the Nevada Test Site. Kistler Aerospace's proposed use of the NTS for aerospace operations is under active discussion and consideration by NV/DOE and by NTS Development, the designated Community Reuse Organization for the Nevada Test Site. Such an activity is interconnected with the comprehensive use of the Nevada Test Site, and should be considered in that context. 40 C.F.R. 1502.4, 1508.25(a)(1); *Village of Grand View v. Skinner*, 947 F.2d 651, 657 (2d Cir. 1991)("'Connected' actions are properly the subject of a single EIS."); Shoshone-Paiute Tribe v. United States, 889 F. Supp. 1297,1308-10 (D.Idaho 1994)(placement of Composite Wing and Idaho Training Range connected and improperly considered under separate EIS processes). 1

Moreover, as demonstrated above, Kistler Aerospace's contemplated activities are addressed in the DEIS. By regulation, the significance of environmental effects must be considered in the context of existing environmental documents and pre-existing circumstances at the site. 40 C.F.R. 1508.27. *See Village of Grand View v. Skinner*, 947 F.2d 651, 657 (2d Cir. 1991). In the context of the existing uses of the Nevada Test Site, and the alternatives contemplated in the DEIS, Kistler Aerospace's contemplated activities are insignificant as a matter of law.

Section 4. The Draft EIS Should Be Modified to Explicitly Reference Kistler Aerospace's Contemplated Activities

The final environmental impact statement for the Nevada Test Site should explicitly reference Kistler Aerospace's contemplated activities under Alternative 3 (Expanded Uses).

NV/DOE cites as illustrations certain activities under Alternative 3, including a spill test facility and a solar energy power generation facility. Kistler Aerospace urges NV/DOE to add the following reference to the list of examples:

- Testing and operating a fully reusable aerospace vehicle, and constructing ground support and manufacturing facilities to support testing and operations.

In addition, NV/DOE should clarify that the references to projects under Alternative 3 do not limit or circumscribe other projects that could be developed and that fall within the environmental effects addressed in the EIS.

A modification of the draft EIS to reflect or refine alternatives is not only proper, but also fundamental to the process mandated by the National Environmental Procedures Act (NEPA). Federal agencies are directed by regulation to respond to comments filed during the comment period. Permissible responses to comments on a draft EIS include modification of alternatives; development of new alternatives; supplementation, improvement, or modification of the agency's analyses; and factual corrections. 40 C.F.R. 1503.4(a). *Lake Hefner Open Space Alliance v. Dole*, 871 F.2d 943, 947 (10th Cir. 1989).

Section 5. Conclusion

For the foregoing reasons, Kistler Aerospace Corporation supports Alternative 3 of those posed in the Draft Environmental Impact Statement for the Nevada Test Site. Kistler Aerospace respectfully urges the Nevada Operations Office of the Department of Energy to reference specifically the contemplated activities of testing and operation of a fully reusable aerospace vehicle on and in the airspace over the Nevada Test Site, the environmental effects of which fall within those addressed already in the draft EIS.

Respectfully submitted,

Robert L. Meuser
Chief Regulatory Counsel

May 2, 1996

Appendix A

Water Resources Center

University and Community College System of Nevada

Environmental Implications of Kistler Aerospace Corporation
Nevada Flight Operations
by
Roger L. Jacobson
Research Professor
Water Resources Center
Desert Research Institute

The project as currently configured is to develop a site in Area 26 on the Nevada Test Site (NTS) to manufacture and fly aerospace vehicles into earth orbit. The site will resemble a small manufacturing complex with an associated take-off area. The vehicles will be built on site using light reusable composite materials. The manufacturing operation will meet all applicable OSHA, EPA, DOE and other agency regulations. The vehicles will be fueled by kerosene and liquid oxygen, which will not be stored on site, but brought in when needed. The vehicle will fly back to the NTS and be recovered.

The purpose of this evaluation is to compare the current draft Environmental Impact Statement (EIS) for the NTS and surrounding areas, and the proposed environmental impacts of NTS operations by Kistler Aerospace Corporation. The draft EIS is not constructed to cover all future operations but rather to investigate the impacts of various activities that could be elements in any major project or operation. This document describes the environmental impacts of the Nevada Flight Operations proposed by Kistler Aerospace.

The first major activity that may impact the environment will be the construction of the facilities in Area 26 on the NTS. This activity will be similar to numerous other activities, either completed or planned, on the NTS. The land will be surveyed for cultural resources, which will potentially include three investigations: 1) a historic mining area, 2) structures from past Atomic Energy Commission (AEC) activities, and 3) archaeology. This type of routine activity is discussed in the draft EIS in Volume 1, Part A, Section 4.1.10.

The biological resources are investigated in a similar and routine manner to the Cultural Resources. This survey is also conducted on a routine basis before any land disturbing activity. This is discussed in Volume 1, Part A, Section 4.1.6 of the draft EIS.

Materials and supplies will need to be transported to the site during the construction phase and during operation. This is a very common NTS activity and is discussed in Volume 1, Part A, Section 4.1.2.3. The transport of normal construction material is not discussed in the draft EIS, however Section 4.1.2.3 covers the transport of explosives, fuels, compressed gas, other petroleum products, and numerous types of waste and debris.

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Provisions for manufacturing and/or fabrication are under both Alternative 1 and 3 in Volume 1, Part A, Sections 3.1.1.6 and 3.1.3.6. Small-scale specialized fabrication and assembly have been conducted on the NTS for decades. The Occupational and Public Health and Safety (Section 4.1.11) related to both the manufacturing and launching are covered by federal and state law, DOE orders, and organizational plans and procedures.

The fueling of the aerospace vehicles with kerosene is similar to fueling other types of vehicle on the NTS. This specific activity is so routine that no reference could be found in the draft EIS. The proposed site has a propellant catch basin which should adequately contain any fuel spills or leaks so that the environment will not be impacted. Kistler current plans are to bring fuel on to the NTS when needed and not to store fuel on site. However, at the present time large quantities of fuel are stored on the NTS and the small amount of fuel required by Kistler would have little or no impact.

The vehicle take-off will result in a gaseous plume of combustion products similar to a jet airplane take-off and perhaps dust production depending on the take-off area configuration. This operation is under Volume 1, Part A, Section 4.1.7 in the draft EIS. The NTS is in the Nevada Intrastate Ar Quality Control Region. The ambient air quality at the NTS is not currently monitored for criteria pollutants or hazardous air pollutants, except for radionuclides. Elevated particulate matter may occasionally occur because of local sources of fugitive particulates. All other pollutant are believed to be low, and would be emitted from boilers or incinerators. Assuming that take-offs are a rather rare event the current air shed should not exhibit any notable change in air quality. The current plumes produced at the spill test facility located on Frenchman Flat dissipate and leave no residual air quality issues.

The noise associated with the Nevada Flight operations is generally believed to be within the levels of past NTS activities. These include surface testing of nuclear weapons, high explosive tests, and aircraft operation. This environmental impact is covered in Volume 1, Part A, Section 4.1.8 of the draft EIS. The remoteness of the site generally precludes the noise impacting the general public and NTS workers will have protective equipment, if required. The take-off site is over 20 miles to the nearest small community (Amargosa Valley) and because of the topograph the noise will be reduced. There is currently no data available related to current NTS noise activities. The State of Nevada nor local governments have not established any specific numerical environmental noise standards.

The visual impact of the aerospace vehicle take should be very short and is unlikely to create a permanent impact. This activity is in Volume 1 Part A, Section 4.1.9 of the draft EIS.

The site in Area 26 will need a water supply, either by extending the existing lines or drilling a new well. Both of these activities are common on the NTS and are covered in Volume 1, Part A, Section 4.1.5.2. The water requirements for the Kistler Nevada Flight Operations are unknown but appear to be very modest. It is unlikely that his water use will in anyway stress the aquifers on the NTS.

COMPANY 5

THE RURAL ALLIANCE FOR MILITARY ACCOUNTABILITY

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Thursday, May 02, 1996

Donald R. Elle, Director
Environmental Protection Division U. S. Department of Energy
P. O. Box 14459
Las Vegas, NV 89114

Dear Mr. Elle,

The following are the Rural Alliance for Military Accountability comments on the Department of Energy's (DOE) Draft Environmental Impact Statement for the Nevada Test Site.

Our comments will focus on the cumulative impacts associated with Department of Defense and DOE activities and proposed expansions in the State of Nevada. For example discussions found on page 6-3 to 6-10 do not even closely resemble proposed expansions at Naval Air Station Fallon and Nellis Air Force Base. This section is insufficient for example the DEIS states that " The sole concern is the proposed withdrawal of land..." These findings ignore the long standing concerns of the State of Nevada, the Western Shoshone Nation and rural impacts associated with low-level and supersonic military aircraft activities which are adversely impacting rural Nevada residents. 1

Presently, over 40% of the skies over Nevada are designated as Special Use Airspace (SUA) for use by the Department of Defense with estimates at 70% with inclusion of Military Training Routes (MTRs). Despite the Pentagon's current control of Nevada's airspace, Naval Air Station Fallon is currently attempting a massive airspace expansion which, if approved, would double their present airspace use in Nevada from 10,200 square miles (15% of the state total) to 21,000 square miles extending eastward to the White Pine Mountains, north to the Ruby Mountains and south into Nye County.

The massive proposal would cover the Duckwater Indian Reservation, the 19th century mining boom town of Eureka, with its collection of nationally historic buildings, the Big Smoky Valley, Round Mountain and portions of the Monitor and Toquima ranges and Tolyabe Mountains. The Currant Mountain, Arc Dome, Alta Toquima and Table Mountain Wilderness Areas would be located beneath the proposed Special Use Airspace. An additional 4 million acres of Nevada would be impacted by military overflights.

As described in the Special Nevada Report the three new Military Operation Areas (MOAs) proposed are:

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MARILYN MEEK
GARY SCHWARTZ
JODY SCHWARTZ
LORENZO VALDEZ
CHUCK WISNIEWSKI

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COMPANY 5 (CONTINUED)

- The **Smoky Military Operation Area** (MOA) would encompass 3,853 square miles and would be designated down to 200 feet Above Ground Level (AGL) with a ceiling of 18,000 Mean Sea Level (MSL) or above sea level.
- The **Duckwater Military Operation Area** (MOA) would encompass 4,818 square miles. The Duckwater Military Operation Areas (MOA) would allow for supersonic intercept where military aircraft may break the sound barrier creating sonic booms.
- The **Diamond Military Operation Area** (MOA) would encompass 3,430 square miles of airspace. The Diamond Military Operation Areas (MOA) would have a floor of 10,000 feet Mean Sea Level (MSL) with a ceiling of 18,000 feet MSL. The Naval proposal includes an exclusion zone of 2,000 feet above ground level in a 3 nautical mile radius centered on the Eureka Airport.
- **Expansion of their Supersonic Operations Area (SOA) within** the proposed Diamond Military Operation Areas (MOA) by 500 square miles. This airspace in which military pilots can fly at supersonic speeds breaking the sound barrier and causing sonic booms could leave the land beneath an uninhabitable area where impacts will eventually force residents to leave. Nearly all the residents have been bought out by the military in Dixie Valley where NAS Fallon is presently conducting supersonic jet training activities.
- **Additional plans by Naval Air Station Fallon include the elimination of the Highway 50 Visual Flight Route** (VFR) and attempts to raise the ceiling on all Restricted Airspace within the Fallon Training Range Complex from 16,000 feet MSL to 45,000 feet MSL.

The proposed expansions will pose serious impacts to civil aviation, property values, wildlife, livestock, hunting, recreation, human health, Native American sovereignty and the quality of life for Nevadans living under these operations. Subsonic jet noise produced by military aircraft flying at 100-250 feet is generally above the pain threshold for humans. A jet flying at full power can produce levels as high as 140 decibels.

If the U.S. military has its way, huge chunks of Nevada's public land would be converted to simulated war zones. The Department of Defense has already dedicated 25 million acres of land (the size of the state of Virginia) to the military. Currently, 20% or over 4 million acres of Nevada public lands are currently designated for the sole use of the military. Nevadans have learned that once public lands are withdrawn, the Pentagon in most circumstances exerts preemptive use of the lands. These actions exclude other multiple use opportunities such as mining, grazing, hunting, and recreation.

Currently, Naval Air Station (NAS) Fallon is attempting to garner control of 196,000 acres of public lands in Churchill County as buffer zones for the present NAS Fallon bombing ranges and Electronic Warfare Range. The action was first proposed in 1982, but delayed by lawsuits and public opposition from environmental, ranching, recreational and mining

COMPANY 5 (CONTINUED)

organizations. All military withdrawals over 5,000 acres warrant an Engle Act (43 U.S. C. 155-158) withdrawal and Congressional approval.

As described in the Special Nevada Report NAS Fallon land withdrawal proposals of 364,833 acres:

- The **Master Land Withdrawal** if approved would grant Naval authority over 189,073 acres of public lands in Churchill County surrounding current Naval Bombing Ranges. The proposal includes 34,023 acres at Bravo 16, located between Fallon and Fernley. The existing B-16 range is already curtailing residential and geothermal development. Private homes are located within one half mile of the range. At Bravo 17, located adjacent to Highway 50 just east of Sand Mountain State Park, 35,895 acres are requested. At Bravo 19, located adjacent to the Walker River Paiute Reservation and Highway 95 a total of 19,073 acres are requested. Additionally, the proposed land withdrawal for the Electronic Warfare Range would add 92,673 acres.

In addition, Naval Air Station Fallon's has requested approximately 7,584 acres to their withdrawal application for the Fallon Range Training Complex of the Naval Air Station, Fallon, Nevada (formerly known as the Master Land Withdrawal).

- The **Bravo 17/ Bravo 19 Land Bridge** would withdraw 122,600 acres of public land. The Proposed Land Bridge of 312 square miles would allow the firing of surface to air missiles from Bravo 19, adjacent to Highway 50 to Bravo 17 bordered by Highway 95 and the Walker River Paiute Reservation between Fallon and Schurz.

- Included in the new proposal is a new 10 square mile bombing range **"Bravo 18"** which as proposed would be south of the present Bravo 17 range .The proposed Bravo 18 bombing Range could withdraw an additional 53,160 acres of public lands. This newly proposed bombing range would be used for dropping and firing live ordinance, laser operations, helicopter operations, rocket firing, Smokey Sam firing, and motorized artillery firing.

Furthermore, the US Air Force is proposing the expansion of the Paradise Military Operation Area in northern Nevada as part of the Enhanced Training Range in Idaho. The Air Force is also proposing the expansion of Special Use Airspace at the Utah Test and Training Range in eastern Nevada. These proposed expansion, if approved, would further impact civilian aviation and rural residents.

The new proposals have raised protests from a broad coalition of interested parties including pilots, ranchers, miners, Native Americans, environmentalists and rural residents across Nevada who have joined hands to fight increasing military encroachment as it impacts their resources and quality of life.

2 In conclusion, we believe that the DOD and DOE should consider as a viable alternative the relocation of Special Use Airspace and Military Training Routes to the Nevada Test

COMPANY 5 (CONTINUED)

2 cont. Site to ensure that military training activities do not disrupt rural life styles. This alternative was not addressed in the DEIS. Implemented of this alternative would demonstrate to the public that are branches of the federal government are working as one to accommodate our nation's needs in a cooperative manner.

Thank you for the opportunity to comment on this important matter. Please feel free to contact us if you have any further questions.

Sincerely,

Grace Bukowski

Grace Bukowski

COMPANY 6

CEDAR STRAT

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April 16, 1996

Dr. Donald R. Elle
EPA Division, DOE Nevada Operations
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle,

Following are my comments and questions concerning the *Draft Nevada Test Site Environmental Impact Statement*.

1 In Volume 1, Chapter 4 lines 16 and 17 the draft states: "....*the NTS is probably the geologically best known large area within the United States.*" I am interested in who made such a sweeping statement and on what basis was the statement made. Since access to the geology of the NTS and surrounding Nellis Range has been highly restricted, independent review by the geologic sciences has been precluded. Your people told me that the draft was made by reviewing peer-reviewed papers of the geology of the area. If the geological community is restricted from scrutinizing geological observations and interpretations by federal geologists or geologists under federal contracts, how can there be an impartial, independent review of the geology there? If it is truly the *best known large area* then there should be reports on sequence stratigraphy, balanced structural cross sections, and other state-of-the-art papers available. Since I saw no reference to modern stratigraphic and structural analysis, I suspect they are not available and/or not completed for the Nevada Test Site. If that is true, then you will need to rewrite lines 16 and 17 as: "*the NTS is probably the geologically least known large area within the United States.*"

2 On page 4-100, lines 21 and 22 there is a reference to a generalized stratigraphic column for the area near the NTS. Is there a detailed stratigraphic column available? Who did it? Have the stratigraphic sequences been defined and how do they correlate to other sections in the region? What sequences in the stratigraphic column involve the regional, Paleozoic carbonate aquifer? I saw no references to regional karst intervals or other porous and permeable sequences in the draft. Is there someone working on the Paleozoic sequence stratigraphy of the NTS as it relates to groundwater aquifers, hydrocarbon reservoirs or ore host rocks? If not, will it be done for the final EIS? How can accurate statements be made about groundwater, hydrocarbon and ore deposits be made if this basic work is not complete? If it is complete, where is it available for independent review? Who did the work? Does the worker(s) have experience with

COMPANY 6 (CONTINUED)

2 cont. carbonate sequence stratigraphy in Nevada? Does he(they) have at least a doctorate degree on sequence stratigraphy? Did he score at least 90% on the Graduate Records Examination for geology? Does he have at least 10 years experience in oil and gas exploration? Has he generated surface gamma-ray logs for their stratigraphic sections?

3 On page 4-100, lines 28 and 29 there are no explanation of how compression deformation rearranged the positions of the Paleozoic rocks and what the implications of the rearrangement have on groundwater and possible extractive minerals including oil and gas. Nether is there reference made to the Las Vegas shear zone that is probably a tear fault related to thrusting. There is no mention how contaminated groundwater from the Test Site mixes with groundwater in the deep carbonate aquifer and how groundwater movement in the aquifer is controlled by the shear zone. There is no mention of deep monitoring wells to measure

4 the velocity of the tritium plume toward the Las Vegas Basin. As a result, there are no plans for mitigating contamination of groundwater in the Las Vegas Basin. Is the Department of Energy prepared to provide an alternate source of water when the tritium plume reaches the Las Vegas Basin?

5 No reference was made to how the Mississippian foreland basin sediments vary between structural plates on line 29, page 4-100. Are there detailed measured sections available with tight biostratigraphic control for the Mississippian sediments. Where are these sections available for review? How do these section correlate with other sections in the region beyond the Test Site?

6 Is there evidence that the strike-slip faults mentioned on line 2, page 4-103 are related to tear faults during the Mesozoic compression event? What evidence is there suggesting there is no relationship? Has there been a detailed sequence stratigraphic analysis been made to compare and contrast the stratigraphy on both sides of the faults? If not, why not? If so, where is the detailed data available for independent review? Where is there a discussion of how these faults control groundwater flow and hydrocarbon and hydrothermal fluid migration? Where is the detailed geologic mapping to document these faults? If the mapping is not done, will it be done by competent geologists before the final EIS is submitted? If not, why not?

7 On page 4-104, line 2, there is reference that the Eleana formation is thought to be bounded by faults. What kind of faults? What thrust sheet is the Eleana Range and Frenchman Flat in? How can an accurate evaluation be made on the contamination of the groundwater in the regional carbonate aquifer be made if

8 there is no reference to what structural plate is involved in the tests? How can there be a remedy to groundwater contamination if the perched water tables are all that are being tested for regional groundwater contamination while the deep carbonate

COMPANY 6 (CONTINUED)

8 cont. aquifer is unmonitored?

9 Figure 4-24, page 4-112 shows no reference to thrust faults in the NTS. Is there a reason thrust faults have been omitted? Have the thrust faults been mapped? Has the stratigraphy between hanging wall and footwall plates been compared and correlated? If not, why not? If so, where is the data for independent review? Who did the correlations? Is the person competent in sequence stratigraphy and the use of surface gamma-ray logs? If not, how was the person chosen to make the correlations?

10 Where is the data concerning the thermal maturity for oil and gas mentioned on page 4-120. Who did the sampling, analyses, and evaluation? Was he (they) certified petroleum geologists with experience in oil and gas exploration? If not, why was there not a certified petroleum geologist assigned to the evaluation? Line 18 states that potential source rocks have low organic carbon and hydrogen indices. Where is this data available? Who generated the data? From which structural plate were the samples taken? From what sequences were the samples taken? How do these plates and sequences correlate with those beyond the NTS. What parameters where used to conclude the low potential for hydrocarbon resources for the region? Who made the conclusions? Was the person a certified petroleum geologist? Were all wells in the NTS logged by independent certified petroleum geologists? What experience did the personnel have who logged wells have? How can the hydrocarbon potential of the region be found out if there has been no evaluation by independent, experienced, oil exploration personnel? Will an evaluation of the oil and gas potential be made by a professional before the final EIS?

11 During the scoping workshop in Caliente, you mentioned that the EIS is not a comprehensive treatise on the geology of the Test Site. I appreciate that, but a brief review of the geology of the NTS should at least summarize the results of sequence stratigraphic analysis and provide at least a generalized balanced structural cross section. There ought to be at least a reference made to the deep carbonate aquifer since it is the most important groundwater resource in the eastern Great Basin.

12 I have enclosed a copy of a recent paper dealing with sequence stratigraphy of rocks involved in the deep carbonate aquifer of eastern Nevada to be incorporated in the final EIS. The paper is on the Timpahute Range which is the closest continuous geologic transect to the NTS and Nellis accessible to the geologic community. Similar sequence analysis should be done in the NTS and in Nellis to complete the geologic review for the EIS.

COMPANY 6 (CONTINUED)

For the "*the geologically best known large area within the United States,*" the geologic part of the draft NTS EIS is inadequate. It should at least provide a summary of the results of millions of dollars of geologic research using modern geologic technology such as sequence stratigraphy and balanced structural cross sections.

Sincerely,

Alan K. Chamberlain
President

cc: Govenor Bob Miller, State of Nevada
Senator Richard Bryan, US Senate
Mary Manning, Las Vegas Sun
Mr. Michael Johnson, Las Vegas Valley Water District
Mr. Carl Johnson, Nevada Nuclear Waste Project Office

COMPANY 6 (CONTINUED)

Devonian Sequences and Sequence Boundaries, Timpahute Range, Nevada

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ABSTRACT

A well-exposed 5000-foot-thick composite stratigraphic section in the Timpahute Range, south-central Nevada, provides a useful reference section for defining Devonian depositional cycles and sequences across the eastern Great Basin. Twenty-one mappable sequences were identified. Each sequence is bounded by discrete surfaces, and is comprised of one or more depositional cycles that exhibit distinctive boundaries and internal characteristics. The section exhibits three major sea-level lowstands that produced regionally and economically significant karst surfaces, and six major sea-level transgressions. Bounding surfaces and internal features were interpreted for their relative sea-level changes and paleoenvironmental significance, and the results were used to create a relative sea-level curve.

A surface gamma-ray profile closely mirrors the sea-level curve. Gamma-ray patterns indicate karst and erosion surfaces, lithofacies and biofacies shifts, and both deepening and shallowing events. Some patterns also suggest lithologic and biostratigraphic transitions that are subtle or undetectable in outcrops. The surface gamma-ray log is valuable for regional correlation of formations, sequences and cycles in other surface and subsurface sections. It is also useful for interpretations of sea-level changes and facies shifts throughout the Devonian section.

Sequences identified in this reference section have been compared to over 50 eastern Great Basin surface and subsurface sections, and they provide a powerful regional correlation tool. Furthermore, these sequences have been used to map complex structures in the Timpahute and adjacent ranges. Some sequence boundaries, such as the karsted Simonson unconformity, provide attractive targets for hydrocarbon exploration in the region.

INTRODUCTION

In this paper, we describe a well-exposed composite section of Devonian rocks in the Timpahute Range, south central Nevada. This reference section can be used to identify and interpret Devonian sequences and cycles across the eastern Great Basin. It lies in the middle and western parts of the greater Timpahute Range, about 120 miles north of Las Vegas (Figs. 1, 2). The Devonian section lies between predominantly carbonate rocks below and a mixture of carbonate and siliciclastic rocks above. It can be correlated to other mountain ranges where much of the Paleozoic section is exposed (Fig. 3).

The Devonian portion of the southwest Mail Summit measured section, referred to in this paper as "TMS", is nearly 5000 feet thick. Table 2 provides formation names of the Paleozoic rocks commonly used in the region. Five formations make up the Devonian TMS section: Sevy Dolomite, Simonson Dolomite, Guilmette Formation, West Range Limestone, and Pilot Formation (Figs. 4, 5). Ages of these formations are approximately of Early, Middle, Late, and very Late Devonian, and Devonian-Mississippian, respectively. Recognition of precise sequence boundaries provides natural boundaries for formations and members. Furthermore, a karst surface at the top of the Simonson Dolomite separates dolostones below from varied lithologies of limestone, dolostone, sandstone, megabreccia and siltstone above. Karsted, coarsely crystalline dolostone below the unconformity is a major hydrocarbon exploration target and probably correlates to the reservoir rocks at the Grant Canyon oil field 55 miles to the north.

Sequences identified in the TMS can be recognized in over 50 eastern Great Basin surface and subsurface sections, and they provide a powerful regional correlation tool (Figs. 1, 6, 7). Diagnostic features and depth indicators listed in Table 3 were used to help identify and group sets of upward-shallowing cycles into sequences in the regional correlations. Figure 6 shows correlations where lithology of individual sequences may vary laterally. Correlation of sequences between surface and subsurface sections is shown in Figure 7. In a further application of this work, the first author has used features listed in Table 4 to identify sequences and map complex structures in the Timpahute, Golden Gate, Worthington, Hiko, Seaman, and Pahranagat ranges. Because the region lacks well bores penetrating the Paleozoic section, this reference section may prove useful in helping unravel the nature of complex structures encountered by deep hydrocarbon exploration tests in southern Nevada.

in M. W. Longman and M. D. Sonnenfeld, eds., 1996, Paleozoic Systems of the Rocky Mountain Region, Rocky Mountain Section, SEPM (Society for Sedimentary Geology), p. 63-84.

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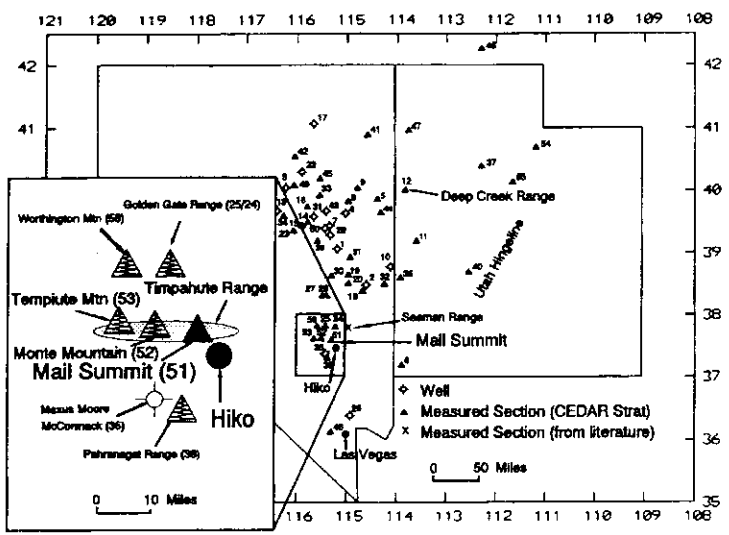

Figure 1. Index map showing parts of Nevada and Utah and location of southwest Mail Summit composite stratigraphic section (TMS) in the greater Timpahute Range near Hiko, about 110 miles north of Las Vegas. Also shown are adjacent (inset) and regional surface and subsurface sections (listed in Table 1) to which Devonian sequences in the southwest Mail Summit reference section were correlated. Dry hole symbols indicate selected study wells that penetrated the Devonian section. The Seaman Range section (X) measured by Hurtubise (1989) is shown. Numbers on the map borders are degrees latitude and longitude. Type sections for the Devonian Sevy, Simonson and Guilmette formations are in the Deep Creek Range (#12 on Table 1), western Utah.

Past Work

Lithostratigraphic terminology used here (Table 2) reflects the most widely used nomenclature for Basin and Range strata (Langenheim and Larson, 1973). Reso (1963) in the Pahranagat Range and Kellogg (1963) in the Egan Range helped define this terminology. In Figure 3, the Devonian stratigraphy of the TMS (section 51, Fig. 1) is compared with the Paleozoic stratigraphy exposed in the Egan (section 20, Fig. 1) and Pahranagat (section 38, Fig. 1) ranges.

Nolan (1935) first applied the names Sevy Dolomite, Simonson Dolomite, and Guilmette Formation to Devonian beds in the Deep Creek Range, western Utah (Fig. 1). Between the very light-gray, slope-forming Sevy Dolomite and the darker gray, ledge-forming Simonson Dolomite is a brown-gray, slope- and ledge-forming interval that includes the Oxyoke Canyon Sandstone Member of the Nevada Formation (Nolan *et al*, 1956) and corresponds to the Oxyoke Interval in this paper. Subdivisions of the Simonson Dolomite were taken from Osmond (1954) and are readily applied throughout much of the Paleozoic platform facies in eastern Nevada and western Utah. Members of formations generally coincide with sequences, and their definition is still being refined.

Reso and Croneis (1959) proposed that the base of a yellow slope-forming bed (Yellow Slope Sequence in this paper), 40 to 90 feet above the highest bed bearing the brachiopod *Stringocephalus*, be the base of the Guilmette

COMPANY 6 (CONTINUED)

Table 1. Measured sections and wells that were correlated to the southwest Mail Summit (TMS) reference section.

No. Well or Measured Section

1. American Hunter Expl., Blackjack Spring
2. Amoco, Dutch John
3. Amoco, East Henderson
4. Anadarko, Combs Peak
5. Antelope Range
6. Beaver Dam Mountains, Horse Canyon
7. Blair, White Pine
8. Cherry Creek Range, Egan Basin
9. Cherry Creek Range, Goshute Canyon
10. Commodore Resources, Outlaw Fed
11. Confusion Range, Little Mile & 1/2
12. Deep Creek Range
13. Depco, Willow Wash
14. Diamond Range, Newark Mountain
15. Diamond Range, Oxyoke Canyon
16. Diamond Range, Rattlesnake Ridge
17. Diamond Shamrock, Kimbark
18. Dutch John Mountain
19. Egan Range, Ninemile
20. Egan Range, Shingle Pass
21. Egan Range, Water Canyon
22. Exxon, Aspen Unit
23. Fish Creek Range, Bellevue Peak
24. Golden Gate Range, Lower Plate
25. Golden Gate Range, Upper Plate
26. Grace Pet., Arrow Canyon-1
27. Grant Range, Forest Home Lower Plate
28. Grant Range, Forest Home Upper Plate
29. GW, Moorman Ranch
30. Horse Range
31. Keith Walker, Fed
32. Limestone Hills
33. Little Bald Mountain
34. Lone Mountain
35. Maxus Expl., Moore McCormack 6-1
36. North Needles Range
37. Oquirrh Mountains
38. Pahranagat Range, Cutler Reservoir
39. Pancake Range, Green Spring
40. Pavant Range, Dog Valley Peak
41. Pequop Range, Independence Valley
42. Pinion Range, Pine Mountain Klippe
43. Ram, Long Jevity-1
44. Red Hills
45. Ruby Range, Pearl Peak
46. Samaria Mountain, Idaho
47. Silver Island Mountain, Graham Peak
48. Spring Mountain, Lovell Canyon
49. Sulphur Springs, Telegraph Canyon
50. Tenneco Oil Co, Illipah-1
51. Timpahute Range, Mail Summit
52. Timpahute Range, Monte Mountain
53. Timpahute Range, Tempiute Mountain
54. Uinta Mountains, Hoyt Peak
55. Wasatch Range, Rock Canyon
56. Worthington Mountain

Formation in the Pahranagat Range. Tschanz and Pampeyan (1970) in their regional synthesis, Hurtubise (1989) in the Seaman Range, Ackman (1991) in the Worthington Range, and Estes (1992) in the Pahranagat Range also placed the top of the Simonson Dolomite at the base of the yellow slope-forming bed. In his work in the Pahranagat Range area, Reso (1960) divided the Guilmette into two members above and below the top of a prominent carbonate megabreccia (B2 Sequence in this paper). Hurtubise (1989) divided the Guilmette into two members above and below the top of the yellow slope-forming bed. We have divided the Guilmette Formation into nine mappable sequences (Fox Mountain, Yellow Slope, and Sequences A through G) that correlate with other measured sections and wells of the eastern Great Basin (Fig. 1).

We propose to modify some formation and member boundaries to conform to newly identified sequence boundaries. Sequence boundaries are genetic, focus on significant and identifiable surfaces, and have great potential for regional correlations.

Sequences and Sequence Boundaries

"Sequence" as used in this paper is one or a bundle of depositional cycles bounded by discrete surfaces. Cycles were sequentially numbered from bottom to top in each sequence and are described in detail by Chamberlain (1996). The average thickness of cycles in TMS, excluding the B2 megabreccia, is 22 feet. Each cycle and sequence has a predictable gamma-ray pattern. Sequences in TMS vary from less than 100 feet to more than 500 feet in thickness and generally have characteristics that contrast with adjacent sequences (Table 4). Significant characteristics that help distinguish one sequence from another include mineralogy, texture, bedding, weathering profile, color, fossil content, shallowing- or deepening-upward trends, gamma-ray signature, and other properties that may be unique to one or a few cycles (*e.g.*, cross stratification, condensed intervals, oncolites, cherts, etc.). Some boundary characteristics that separate sequences include karsted surfaces, erosional surfaces, desiccation cracks, paleosols, sharp contacts, transgressive lags, and abrupt deepening events (Fig. 4).

We use widely accepted sequence stratigraphic terms to describe and interpret the Devonian strata in Nevada (*cf.* Baum and Vail, 1988; Weimer, 1992). A sea-level Lowstand Surface of Erosion (LSE) is an unconformity or significant hiatus formed during a relative lowstand of sea level. In carbonate rocks, LSEs are signaled by zones of karst, paleosols, deep cracks, and obvious erosion. A Transgressive Surface of Erosion (TSE) is a hiatus formed by waves and currents crossing the position of the stratigraphic section as sea level rose. It commonly represents little erosion, and may be a sharp surface or rendered vague by bioturbation. A Maximum Flooding Surface (MFS) is formed during sea-level transgression and highstand. In contrast, a Condensed Section (CS) represents beds deposited during a sea-level highstand above the MFS.

COMPANY 6 (CONTINUED)

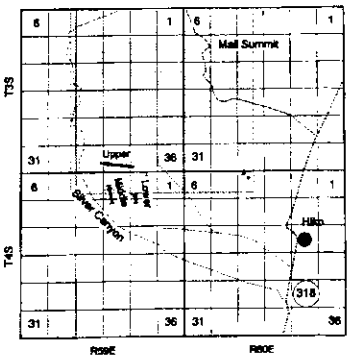

Figure 2. Location of lower, middle and upper segments of the southwest Mail Summit composite stratigraphic section. Access is by gravel road from Highway 318 to Silver Canyon. Arrows point up-section. The Mail Summit topographic 7.5 minute quadrangle is stippled.

LOCATION

In this paper, the southwest Mail Summit measured section (TMS), measured within the southwest Mail Summit 7.5 minute quadrangle, consists of three segments (Fig. 2). All three segments lie within the same structural thrust plate (Chamberlain and Gillespie, 1993). The basal segment of the TMS includes Sevy Dolomite Sequence 3 through the top of the Simonson Dolomite Brown Cliff Sequence. Along strike to the west, the middle segment contains the Simonson Upper Alternating Sequence through the base of Guilmette Sequence D. Measured along a ridge-top one mile north of the other two segments, the base of the upper segment includes Guilmette Sequence B2 to the Mississippian Joana Limestone. Overlap of Sequences B2 and C was made to compare and contrast reef and off-reef features.

METHODS

Measured Sections

A traverse of the least structurally deformed and best exposed section was chosen by constructing a 1:24,000 scale reconnaissance geologic map of the southwest Mail Summit 7.5 minute quadrangle area. Mounted with a clinometer corrected for structural dip, a 5-foot Jacob's Staff was used to measure section thicknesses. Outcrop profile, description, and gamma-ray measurements at 2.5-foot intervals were recorded on audio tape. Outcrop descriptions included cycle boundaries, internal lithologies, colors, textures, fossil content, sedimentary structures, bedding, and other significant information. A numerical value representing facies environments was assigned to each facies while in the field. These data were used to construct a relative water-depth (relative sea-level) curve. Criteria used to make facies assignments are summarized in Table 3.

Surface Gamma-Ray Logs

Surface gamma-ray logs provide a powerful correlation tool in frontier areas (Chamberlain, 1983). Figures 3, 6 and 7 provide examples of surface and subsurface correlations in the greater Timpahute Range. Note that the gamma-ray patterns above Sequence B allow correlation between the sections (Fig. 6), despite changes in lithology.

Gamma-ray measurements were made by holding a scintillometer waist high and recording the counts per second from the digital display (Chamberlain, 1983). The data were transcribed onto a spreadsheet for further data manipulation and preparation for graphic output. A paper printout of the measured section at a large scale (*e.g.*, 1 in. to 10 ft) allowed detailed correlation of the gamma-ray log with the outcrop description. A final printout at smaller scales (*e.g.*, 1 in. to 200 ft) compressed the gamma-ray log and emphasized subtle, but significant, changes that helped to distinguish sequence boundaries (Figs. 5, 6, 7). The gamma-ray log is compressed much more (*e.g.*, 1 in. to 2000 ft) and the lithology is greatly generalized in Figure 3.

A "gamma-ray inflection" is an increase in radiation or excursion to the right on the gamma-ray log and a "gamma-ray deflection" is a decrease in gamma radiation or an excursion to the left. Of the three naturally occurring radioactive elements, potassium and/or thorium in detrital dust is probably the most likely source of gamma radiation in most Devonian rocks of Nevada. Detritus-poor, open-marine carbonates at the base of cycles emit less gamma radiation than detritus-rich, supratidal silty dolostones at the top of cycles. Wilson and Pilatzke (1987) suggested that gamma-ray inflections in time-equivalent beds of the Williston Basin are caused by wind-blown, thorium-rich silt deposited under arid climate conditions. However, the sharp, intense gamma-ray inflections in the Mississippian-Devonian Pilot Formation and in the Mississippian Antler clastic shales and the general increase in radiation upward (Fig. 3) are probably due to uranium concentrated in organic-rich, fine-grained detrital rocks.

DEVONIAN SEQUENCES

Figure 5 summarizes the Devonian sequences identified and described in this paper. Abbreviations in the first column, defined in the legend, show the sequence order. Gamma radiation was recorded and plotted as counts per second, similar to API units in well logs. Major lithologies and surfaces are illustrated in the lithologic column. Facies values assigned in the field (Table 3) were used to plot the

COMPANY 6 (CONTINUED)

relative sea-level curve. Each excursion to the right marks a deepening event at the base of each upward-shallowing cycle. Cycles within each sequence are sequentially numbered from bottom to top (Chamberlain, 1996). The sea-level curve is a mirror-image of the gamma-ray curve (*i.e.*, gamma radiation intensity decreases over rocks deposited during sea-level rises [*e.g.*, at approximately 2000 ft in Fig. 5]). Boundary characteristics that separate sequences are listed in the right-hand column. Generally, features are listed in the order they occur in the section (from bottom to top). The lower part of the Mississippian Joana Limestone is included to complete the TMS.

Shown in Table 3 are the number (relative sea-level depth scale) and characteristics of each facies, as assigned in the field. The depth scale was used to construct the sea-level curve in Figure 5. Interpreted facies are shown in the middle column. Diagnostic features and/or depth indicators in the right-hand column summarize features observed in the TMS sequences, and documented in many other measured sections in the Great Basin (Fig. 1).

Using significant boundary characteristics (LSEs, TSEs, etc.), internal features (lithofacies, biofacies, trends, etc.), and gamma-ray response, we divided the Devonian section into 21 genetic mappable rock sequences. Table 4 provides a convenient reference for the thicknesses, number of cycles, and significant features that distinguish each sequence. These criteria are useful for mapping complex structures in the region and for correlating sequences to other Great Basin surface and subsurface sections. Most of the sequences are composed of bundles of thinner (tens of ft) cycles.

Sequence Boundaries

Karst and desiccation cracks mark relative sea-level Lowstand Surfaces of Erosion (LSEs). Karsted surfaces mark the tops of the following sequences: Coarsely Crystalline and Upper Alternating of the Simonson Dolomite, Fox Mountain, and Sequences B2, B3, and F of the Guilmette Formation (Fig. 5). Desiccation cracks occur at the top of the Fox Mountain Sequence and tops of cycles in Guilmette Sequences D, E and F. Desiccation cracks filled with quartz sandstones also commonly occur at the top of Guilmette G cycles. LSEs, represented by paleosols, occur at the tops of the Fox Mountain and Sequence B3 of the Guilmette.

Transgressive Surfaces of Erosion (TSEs) commonly occur at sequence or cycle bases where carbonate mudstones and/or wackestones with open-shelf fossils abruptly overlie platform, fossil-poor, light-gray, laminated dolostones representing restricted platform carbonates at the top of the underlying shallowing-upward cycle. This type of TSE occurs at the base of each of the following sequences: 1) Simonson Brown Cliff-Forming Sequence, 2) Guilmette Sequences A1, A2, and D, 3) West Range Limestone, and 4) Joana Limestone. TSEs signaling less pronounced deepening events commonly mark internal, thinner (tens of ft) sequences or cycles. TSEs may truncate desiccation crack-bearing, quartz sandstone caps of many upward-shallowing cycles in Sequence G. They also truncate the uppermost cycles in Sequences D and F and may merge with the underlying LSEs. Lag deposits commonly occur just above TSEs such as those at the bases of the Oxyoke Formation, Simonson Lower and Upper Alternating and Brown Cliff Sequences, Guilmette Fox Mountain and Sequences A2, B3, and F, and Pilot Sequence 2. Hummocky cross-stratification occurs just above TSEs marking the base of both Sequences of the Oxyoke Interval and in the lower part of Guilmette Sequence E Cycle 8.

Gamma Radiation

The large-scale trend of background gamma radiation decreases from supratidal Sevy dolostones to open-shelf carbonates of Sequences A2 through B3. Three major, large-scale (100s of ft) upward-deepening sequences, composed of numerous minor upward-shallowing cycles, occur in the basal 2000 feet of the measured section (Fig. 5). Gamma radiation generally decreases upward in each of the large-scale sequences. The Simonson Brown Cliff Sequence occurs at the top of the lowermost large-scale sequence and contains the first occurrence of open-shelf fossils in the TMS. Gamma radiation of the Brown Cliff Forming Sequence is less intense than of the adjacent sequences above or below. The Guilmette Fox Mountain Sequence and Sequence B occur at the top of the other two large-scale sequences in the overlying 1000 feet. As with the Brown Cliff below, open-marine carbonates of the Fox Mountain and Sequence B provide less gamma radiation than adjacent sequences. In the Guilmette, gamma radiation increases from the base of Sequence B to the top of Sequence C. Gamma radiation is less intense than in Sequences C and E and is nearly constant through Sequence D.

Gamma-ray patterns of the upward-shallowing Sequence F and subsequent sequences are inverse to underlying patterns. Instead of gamma radiation increasing from an open-shelf to supratidal environment in each cycle, bases of cycles from Sequences F and upward through the Pilot Sequences, which represent deeper-water and more basinal rocks, produce a stronger gamma response. This increase in gamma radiation at cycle bases is probably due to the greater influx of terrigenous material associated with the incipient Antler Orogeny.

SEQUENCE DESCRIPTIONS AND INTERPRETATIONS

Sevy Dolomite
(980 ft thick at Tempiute Mountain, 3 sequences)

A regional unconformity (Osmond, 1962), the surface between the Silurian Laketown Dolomite and the Devonian Sevy Dolomite, correlates with the base of the second-order Sauk sequence boundary of Wheeler (1942). Generally, a change from cliff-forming, dark gray, chert-

COMPANY 6 (CONTINUED)

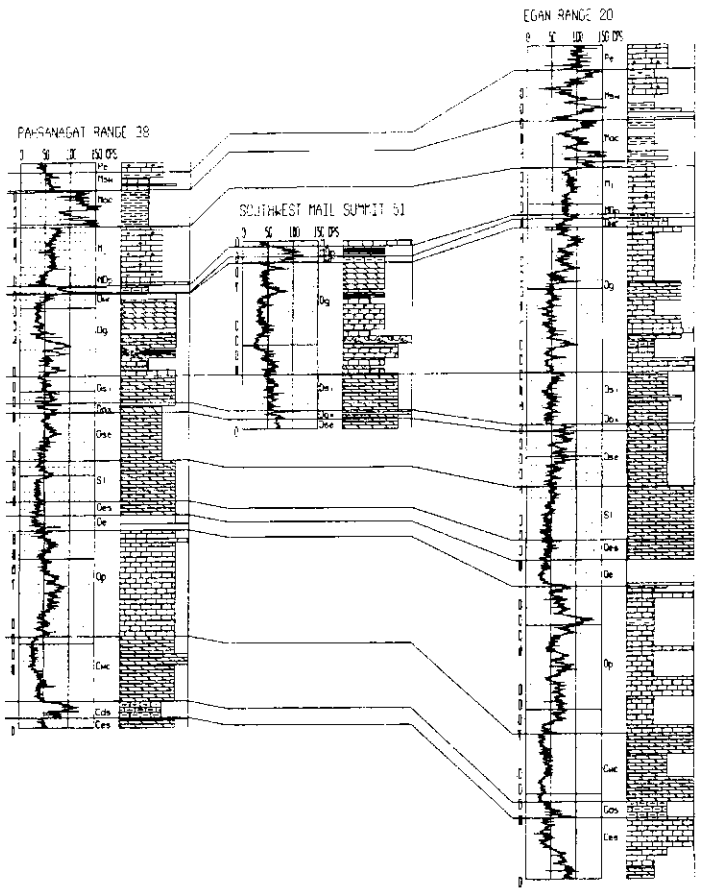

Figure 3. Paleozoic correlation chart that compares the Devonian stratigraphy of the Timpahute Mail Summit (TMS) measured section (section 51, Fig. 1) with the Paleozoic stratigraphy exposed in the Egan (section 20, Fig. 1) and Pahranagat (section 38, Fig. 1) ranges. Table 2 summarizes the Paleozoic nomenclature and formation abbreviations used in this paper. Commonly used symbols are used to illustrate lithology. Vertical scales in feet.

bearing, fossil-rich Silurian dolostones to slope-forming, fossil-poor, laminated, light-gray Devonian dolostones marks the sequence boundary. This boundary may also be subtle and occur on partly covered slopes of light-gray dolostone. Fossils in the Laketown Dolomite suggest deposition in open-shelf conditions, whereas Osmond (1962)

COMPANY 6 (CONTINUED)

Table 2. Paleozoic nomenclature in southeastern Nevada with abbreviations used in Figure 3. The numbers in the colun headers correspond to the section number on Figure 1.

ABBRV	AGE	THIS PAPER 51	KELLOGG (1963) Egan Range 20	RESO (1963) Pahranagat Range 38
Pe	Pennsylvanian	Ely Limestone	Ely Limestone	Bird Spring Formation
Msw	Mississippian	Scotty Wash Sandstone	Scotty Wash Sandstone	White Pine Group. Langenheim and Larson (1973) included Scotty Wash in upper part.
Mc		Chainman Formation	Chainman Shale	
Mj		Joana Limestone	Joana Limestone	Joana Limestone
MDp	Mississippian/ Devonian	Pilot Formation	Upper West Range Formation	Pilot Formation
Dwr	Devonian	West Range Limestone	Lower and Middle West Range Formation	West Range Limestone
Dg		Guilmette Formation	Guilmette Formation	Guilmette Formation
Dsi		Simonson Dolomite	Simonson Dolomite	Simonson Formation
Dox		Oxyoke Interval	sandstone lens (0-25 feet thick near top of Sevy Dolomite	sandstone bed at base of Simonson Formation and calcareous siltstone and chert at top of Sevy Formation.
Dse		Sevy Dolomite	Sevy Dolomite	Sevy Formation
Sl	Silurian	Laketown Dolomite	Laketown Dolomite	Laketown Dolomite
Oes	Ordovician	Ely Springs Dolomite	Fish Haven Dolomite	Ely Springs Dolomite
Oe		Eureka Sandstone	Eureka Sandstone	Eureka Sandstone
Op		Pogonip Formation	Pogonip Group	Pogonip Group
Cwc	Cambrian	Whipple Cave Formation	Whipple Cave Formation	Desert Valley Formation
Cd		Dunderberg Shale	Dunderberg Formation	Dunderberg Shale
Ces		Emigrant Springs Formation	Emigrant Springs Formation	Highland Peak Formation

suggested that the fossil-poor Sevy originated as a primary evaporitic dolostone (supratidal).

Internally, the Sevy contains thin beds of rip-up clasts that mark the bases of minor cycles within the formation. These minor cycles are illustrated as sea-level rises on Figure 5. It is difficult to divide the Sevy into sequences on the outcrop, but a change in gamma-ray character allows division of the section into three sequences. The contact with the underlying Laketown Dolomite and Sequences 1 and 2 are not exposed in the TMS, but are exposed in a section at Tempiute Mountain (Figs. 1, 6, 7) where Sequences 1-3 are 275, 365, and 340 feet thick, respectively. Sequence 2 exhibits a stronger and more erratic gamma-ray pattern than the characteristically smoother pattern observed in the overlying Sequence 3 (Figs. 6, 7). At the TMS, only 240 feet of Sequence 3 is exposed.

Oxyoke Interval (195 ft, 2 sequences)

The Cherty Argillaceous and Sandy Members of the Sevy Dolomite (Osmond, 1962) are similar to Sequences 1 and 2 in this paper. One difference is that the base of Sequence 1 is immediately below a prominent gamma-ray deflection at a flat-pebble conglomerate (at a TSE) and not at the first occurrence of argillaceous dolostone above the conglomerate. Another difference is that the base of Sequence 2 is not always at the base of prominent sandstone beds such as at Tempiute Mountain (Figs. 6, 7). Except for a 60-foot-thick sandstone bed at TMS, background gamma radiation of the Oxyoke Interval is significantly higher than the adjacent strata. The sandstone represents the Oxyoke Canyon Sandstone Member of Nolan *et al* (1956) and commonly produces a local gamma-ray deflection within a regional gamma-ray inflection in sections where the sandstone is present. This characteristic gamma-ray inflection has been correlated to the wells and measured sections shown on Figure 1 (see also Figs. 6, 7).

Oxyoke: Sequence 1 (100 ft thick, 4 cycles)

The lower boundary of Sequence 1 is a merged LSE and TSE that separates the underlying laminated, quartz-free, light gray Sevy dolostone from the overlying light-yellow-brown, sandy, hummocky cross-stratified, intraclast (flattened rip-up clasts) packstone grading upward to finely crystalline, black chert nodule-bearing, burrowed Oxyoke dolomudstone. In contrast to the supratidal Sevy Dolostone,

COMPANY 6 (CONTINUED)

LEGEND

Symbol	Sequence
Mj	Joana Limestone
MDp2	Sequence 2, Pilot Formation
MDp1	Sequence 1, Pilot Formation
Dwr	West Range Limestone
Dgg	Sequence G, Guilmette Formation
Dgf	Sequence F, Guilmette Formation
Dge	Seqeunce E, Guilmette Formation
Dgd	Seqeunce D, Guilmette Formation
Dgc	Sequence C, Guilmette Formation
Dgb3	Sequence B3, Guilmette Formation (reef)
Dgb2	Sequence B2, Guilmette Formation (breccia)
Dgb1	Sequence B1, Guilmette Formation
Dga2	Seqeunce A2, Guilmette Formation
Dga1	Sequence A1, Guilmette Formation
Dgys	Yellow Slope Sequence, Guilmette Formation
Dgfm	Fox Mountain Sequence, Guilmette Formation
Dsiualt	Upper Alternating Sequence, Simonson Dolomite
Dsibc	Brown Cliff Forming Sequence, Simonson Dolomite
Dsilalt	Lower Alternating Sequence, Simonson Dolomite
Dsicdn	Coarsely Crystalline Sequence, Simonson Dolomite
Dox2	Oxyoke Sequence 2
Dox1	Oxyoke Sequence 1
Dse3	Sequence 3, Sevy Dolomite
Dse2	Sequence 2, Sevy Dolomite
Dse1	Sequence 1, Sevy Dolomite

BOUNDARY FEATURES

CS	Condensed Interval
HCS	Hummocky Cross-stratification
MFS	Maximum Flooding Surface
LAG	Lag Deposit, Rip-up clasts
D/S	Deep over Shallow
TSE	Transgressive Surface of Erosion
SC	Sharp Contact
TC	Transitional Contact
LSE	Low stand Surface of Erosion
DIS	Dissolution Surface (Karst)
PS	Paleosol
DC	Desiccation Cracks

LITHOLOGY

- Limestone
- Cherty limestone
- Silicified stromatiolites
- Limestone with lag
- Karsted limestone
- Dolostone
- Karsted dolostone
- Stromatoporoid reef
- Calcareous siltstone
- Sandstone
- Desiccation cracks in sandstone

Figure 4. Legend for sequence symbols, sequences, boundary features, and lithologic symbols in Figure 5.

the interpreted depositional environment of the basal Oxyoke is an open shelf above storm-wave base. All four of the Sequence 1 cycles are upward-shallowing and are interpreted as culminating in low intertidal to supratidal environments. A small gamma-ray spike followed by a prominent gamma-ray deflection marks the base of Sequence 1 (Fig. 5).

Oxyoke: Sequence 2 (95 ft thick, 2 cycles)

The base of Sequence 2 in the TMS is the base of a light orange-brown quartz sandstone cliff that creates a regionally recognizable but intermittent stratigraphic unit. Hummocky cross-stratification at the base suggests another deepening event within the Oxyoke Interval. Medium yellow-brown, fine- to medium-grained, crossbedded, dolomite-cemented quartz sandstone comprises the first of the two cycles. Quartz sand content decreases upward and the cycle appears to shallow upward. The second cycle is composed of finely-crystalline, medium dark-gray dolostone that contains upward-thickening sandy beds. Superficially, there appears to be a transition upward from sandy Oxyoke beds to the overlying Coarsely Crystalline Sequence of the Simonson Dolomite. However, a sharp gamma-ray deflection was used to define the boundary between the Oxyoke and the overlying Simonson (Figs. 5, 6, 7).

Simonson Dolomite (860 ft, 4 sequences)

The four sequences of the Simonson coincide with the four members identified by Osmond (1954): Coarsely Crystalline, Lower Alternating, Brown Cliff, and Upper Alternating. Two major karst surfaces, one at the top of the Coarsely Crystalline Sequence and the other at the top of the Upper Alternating Sequence, create significant karst zones that make the Simonson an attractive hydrocarbon exploration target (Figs. 8, 9).

COMPANY 6 (CONTINUED)

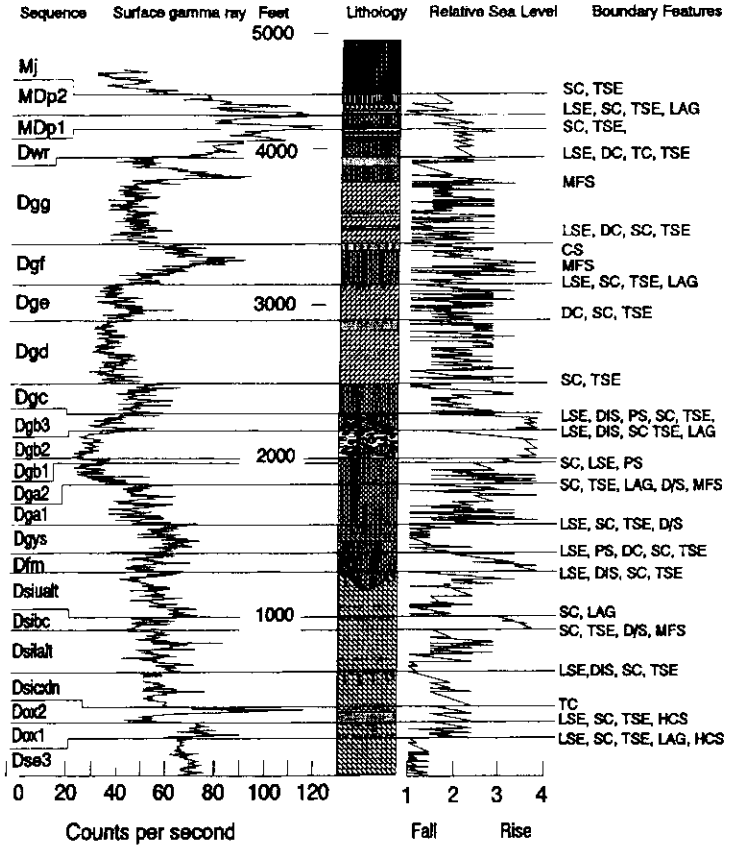

Figure 5. Composite stratigraphic column of southwest Mail Summit section showing sequences, surface gamma-ray log, stratigraphic column, relative sea-level curve, and sequence-boundary features (see legend in Fig. 4 for explanation of abbreviations and lithologic symbols, Table 3 for criteria and values used to construct the relative sea-level curve, and Table 4 for sequence thicknesses, numbers of cycles and significant features).

Simonson: Coarsely Crystalline Sequence
(225 ft thick, 4 cycles)

Recrystallization to coarse-grained dolostone has obliterated most primary depositional features in this basal member of the Simonson Dolomite. Solution collapse breccias and drusy cavity fillings occur tens of feet below the top of the sequence, indicating exposure and a major LSE. Intensity of karsting and crystal coarseness increase to the upper boundary (Fig. 5). Composed of subtidal

COMPANY 6 (CONTINUED)

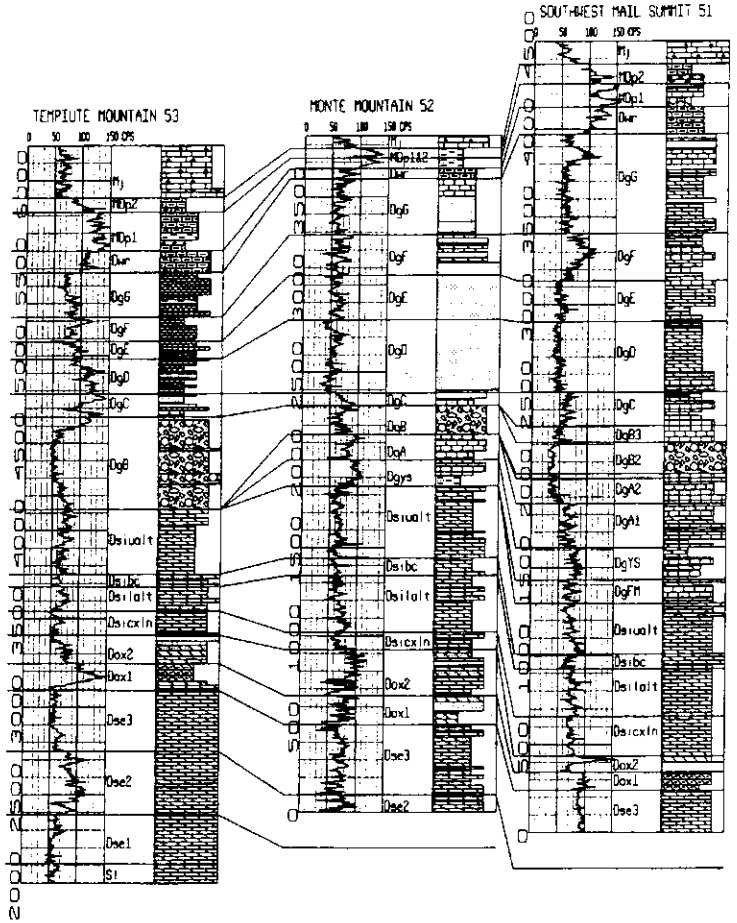

Figure 6. Correlation of three measured sections in the Timpahute Range separated by Mesozoic thrust faults (see inset map on Fig. 1 for location of the measured sections at Mail Summit, Monte Mountain and Tempiute Mountain). Spaces between the columns are proportional to the distances between sections. The datum is the top of Sequence C (DgC). Lithologic symbols are standard. Vertical scales in feet. Note that the megabreccia of Sequence B progressively overlies older rocks westward until it rests on the Simonson unconformity at Tempiute Mountain.

COMPANY 6 (CONTINUED)

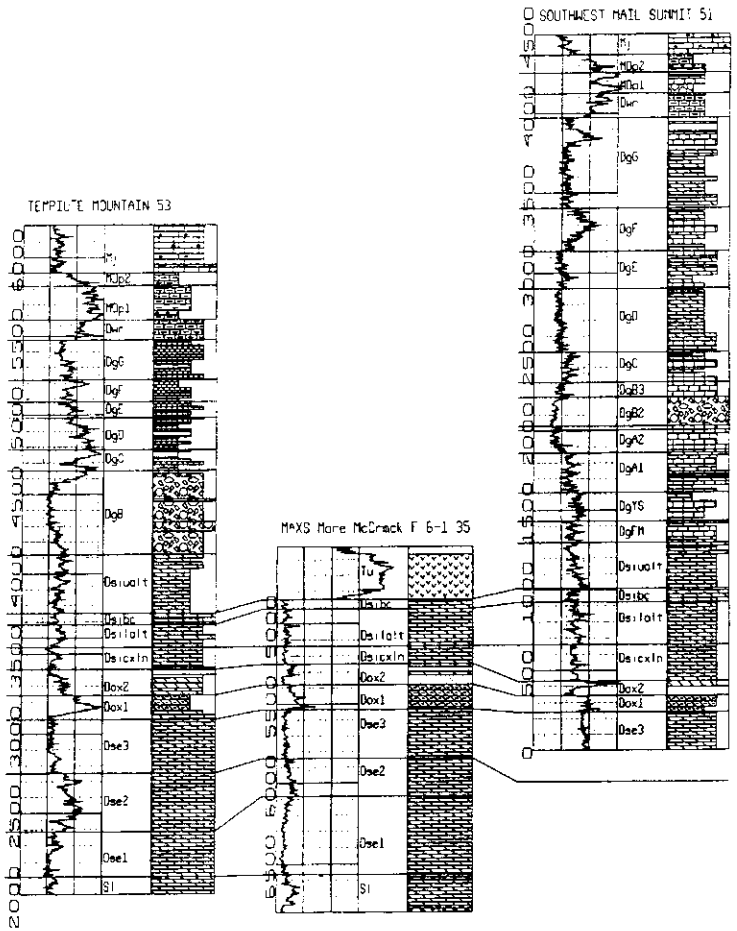

Figure 7. Correlation of TMS (51) and another measured section (53) in the Timpahute Range with the Maxus Moore McCormack Federal 6-1 (35) well (see inset map in Fig. 1 for locations). Standard lithologic symbols are used. Vertical scales in feet. Erosion at the Tertiary unconformity has removed the upper part of the section in the McCormack well. The diagram illustrates how surface gamma-ray logs, calibrated with exposed sequences, can be used to identify sequences in the subsurface. Datum is the karsted surface marking the top of the Simonson, coarsely crystalline sequence.

COMPANY 6 (CONTINUED)

Table 3. Sequence characteristics used to compile the relative sea-level curve. Facies numbers (relative sea-level values) were assigned while measuring sections in the field and are used to plot the relative sea-level curve in Figure 5. Bold type signifies the most important characteristics. Facies numbers greater than four occur above Sequence B at Tempiute Mountain (Fig. 6) and do not occur at southwest Mail Summit. Diagnostic features and depth indicators were used to interpret and group strata into facies sets. Assignment of facies numbers is a subjective process that improves with experience.

Facies # (Fig. 5)	Interpreted Facies	Diagnostic Features/Depth Indicators
1	Supratidal	Usually **dolomicrite**, forms recessive slopes, **very light-gray to yellow-gray**, microcrystalline to very finely-crystalline, algal (stromatolitic), ripple, wavy and/or parallel **laminations**, mud-chip breccia, rip-up clasts, windblown **silt and scattered quartz grains**, paleokarst, **solution breccias**, vugs, paleosols, terra rosa, **desiccation cracks**, bird's-eyes, **tepee structures**; laminated dolomicrites commonly cap upward-shallowing cycles and exhibits a **higher gamma-ray log signature** than adjacent more seaward strata. The most diagnostic features are the light color, laminations, dolomicrite, desiccation or karst features, silt and scattered quartz grains and high gamma-ray log signature.
1.5	Low Supratidal	Usually **dolomicrite,** forms slightly resistive slopes, darker (**medium- to light- gray**) than 1 but lighter than 2, thin bedded to **weakly-laminated** transitional between supratidal and intertidal strata. It forms the cap on upward-shallowing cycles where erosion has cut out high supratidal strata. It exhibits a slightly higher gamma-ray log signature than intertidal rocks below but slightly lower than supratidal rocks above. The most diagnostics feature are weak laminations, light-gray color, and dolomicrite.
2	Intertidal	Commonly dolomicrite and/or dolomitic lime mudstone, characteristically partly covered intervals, **mottled** light- to very light-gray to medium dark- gray, microcrystalline or very finely crystalline to sucrosic, parallel-ripple and/or low-angle cross-laminations, low angle cross-bedding, channel and tidal flat quartz sandstone, shelly **intraclast lags, rip-up clasts**, vugs, sparse chert. Commonly lies between restricted-shelf and supratidal strata in an upward-shallowing cycle. May form base of upward-shallowing cycle. The gamma-ray log signature is higher than the low intertidal strata below but lower than supratidal strata above. Intraclast lags and mottles are the determining features.
2.5	Low Intertidal	Commonly dolomicrite and/or dolomitic lime mudstone, forms low ledges, dark gray to medium-light gray, brown-gray to medium gray, intraclast mudstone-wackestone, medium bedded, commonly **mottled/burrowed**. May form the base of upward-shallowing cycles but commonly occurs between restricted-shelf and subtidal strata. The gamma-ray log signature is lower than intertidal strata above but higher than restricted-shelf strata below. Relative cycle position and mottles/burrows are the determining factors.
3	Restricted subtidal-shelf	Limestone or dolostone, forms ledges, medium dark- to medium-light gray, ***Amphipora*** wackestone-packstone, **low faunal diversity**, some thin-shelled brachiopods, uncommonly gastropod-rich and rare stromatoporoids. It usually occurs between transgressive basal open-shelf and shallow intertidal strata. The gamma-ray signature may be the lowest value in the cycle, but commonly underlying open-shelf strata exhibit slightly lower radiation. The presence of *Amphipora* and low faunal diversity provide the most diagnostic criteria.
3.5	Partially restricted subtidal-shelf	Limestone or dolomitic limestone, forms prominent ledges, medium light- to dark-gray or light brown-gray, **small rounded stromatoporoids** and/or *Amphipora* packstone-wackestone, burrowed/mottled mudstone, massive to medium bedded, dolomite/limestone, crinoids, rugose corals, grainstones, storm lags. Commonly forms the basal part of upward-shallowing cycles and emits less gamma radiation than adjacent strata. Small rounded stromatoporoids are the most significant criterion.

to supratidal, medium light-gray, highly fractured, vuggy (Fig. 8), coarsely-crystalline dolostone, the first three upward-shallowing cycles exhibit faint crossbedding. Except where obliterated by karst breccia, rip-up clasts and burrows mark the base of the fourth cycle of finely-crystalline dolostone. A slight gamma-ray inflection marks the upper karsted surface of the sequence and correlates to other wells and sections (Fig. 7). Gamma radiation in the sequence is generally low and forms a smooth signature. Within the sequence, gamma radiation of each cycle gradually increases upward, then abruptly decreases at the base of the overlying cycle.

Simonson: Lower Alternating Sequence (265 ft thick, 12 cycles)

A transgressive lag above the merged LSE and TSE marks the base of the Lower Alternating Sequence. Twelve prominent upward-shallowing cycles form the sequence. Each cycle is tens of feet thick and exhibits an alternating light and dark appearance. These cycles contain minor cycles (<10 ft thick). Subtidal, medium-gray to dark-gray, burrowed, medium-crystalline dolostone that commonly contains *Amphipora* makes up the base of the major cycles. They shallow upward to supratidal, light-gray, fossil-poor,

Table 3. Continued.

Facies # (Fig. 5)	Interpreted Facies	Diagnostic Features/Depth Indicators
4	Open-shelf	Limestone (rarely dolostone), forms prominent ledges and/or cliffs, dark-medium gray, **crinoid**, coral (rugose and/or colonial) brachiopod, bryozoan, gastropod mudstone-wackestone-packstone, with **bulbous-tabular stromatoporoids**, rich **faunal diversity**, abundant fossil fragments. Hummocky cross-bedding at the base of some cycles. Commonly forms transgressive strata over the base of upward-shallowing cycles and usually exhibits a sharp decrease in gamma radiation. Crinoids, massive to tabular stromatoporoids and rich faunal diversity in limestone form the most important criteria.
4.5	Deep Open-shelf	Limestone, rare early-formed dolomite, forms thin ledges, **medium dark gray**, nodular lime mudstone, with uncommon **crinoid** and/or **brachiopod fragments**, burrowed, with **chert stringers**, massive to thick bedded. Rarely forms the lower part of shallowing upward cycles. The gamma-ray log pattern is similar to open-shelf carbonates. Crinoids and brachiopods, darker gray limestone than open-shelf strata, and chert stringers provide diagnostic criteria.
5	Shelf Edge	Limestone, forms thin ledges and/or partly covered slopes, medium gray-**black**, lime mudstone, very thin- to thin-bedded, laminated, **chert nodules and lenses**, rare fossils, abundant load casts/soft sediment deformation. Rarely forms the base of shallowing upward cycles. Gamma-ray radiation is higher than with open-shelf strata. This and the next three shelf occur almost exclusively in the Guilmette Formation above Sequence B at Tempiute Mountain. The black color and chert are diagnostic features.
5.5	Upper Slope	Limestone, forms partly covered slopes, **dark-gray**, **no fossils**, contains **bedded chert**. Gamma-ray log signature is relatively high but slightly lower than the more shallow strata above. Rarely preserved between more basinward shelf slope strata and shoreward shelf-edge strata of 5. These and the two positions following are unique to the Tempiute Mountain section. Dark-gray limestone with bedded chert and lack of fossils are diagnostic features.
6	Slope	Limestone, forms covered slope with sparse prominent ledges, lime mudstone, **ribbon limestone** with pale-red **siltstone partings**, convoluted and isoclinal **soft sediment deformation**, sparse deep-water trace fossils. Where present, it commonly forms the lower part of shallowing-upward cycles. Gamma radiation is relatively low and is similar to the gamma-ray signature over open-shelf strata at the base of shallowing upward cycles. Diagnostic features include thin, ribbon limestone and convolute, soft-sediment deformation.
7	Base of Slope	Sandstone, forms thin ledges and partly covered slopes, light- to dark-gray, fine- to coarse-grained, **lithic graywacke**, deep-water sandstone (**turbidites**) and siltstone, interbedded thin-bedded unfossiliferous silty limestone, deep-water trace fossils. Occurs **rarely** in the Tempiute Mountain section above Sequence B2 Guilmette Formation. Usually forms the base of upward-shallowing cycles but rarely occurs near the top of a cycle. Gamma-ray log signature is usually lower than overlying shelf-slope strata. Lithic graywacke is the most characteristic feature.

finely-crystalline dolostone, some with tepee structures. Successive cycles become bathymetrically deeper, and become thinner to the middle of the sequence and then thicken to the top (Fig. 5). Gamma radiation increases abruptly at the base of the sequence and gradually decreases upward (Figs. 5, 6, 7). Minor fluctuations superimposed on the upward decrease in gamma radiation roughly track the twelve upward-shallowing cycles, with each cycle marked by a subtle gamma-ray decrease at the base and an increase upward.

Simonson: Brown Cliff Sequence (85 ft thick, 4 cycles)

A regionally significant undulating surface cuts into the top of the Lower Alternating Sequence and represents a merged LSE and TSE directly overlain by an MFS. Recrystallization has largely masked a transgressive lag in the Brown Cliff Sequence above the erosional surface.

Composed of four upward-shallowing cycles, the overall sequence contains open-shelf corals, stromatoporoids, bryozoans, crinoids and brachiopods and appears to shallow upward. An upward decrease in coral abundance and in stromatoporoid size also suggests upward-shallowing with increasingly restricted circulation. Each cycle is composed of dark-gray, course- to medium-crystalline dolostone and contains a distinctive fossil assemblage as follows: Cycle 1—*Amphipora*, corals, brachiopods, crinoids; Cycle 2—thick *Amphipora* beds, abundant brachiopods, corals, crinoids; Cycle 3—large (7 to 12-inch diameter) bulbous stromatoporoids; Cycle 4—small (2 to 4-inch diameter) stromatoporoids.

Table 4. Thicknesses, numbers of cycles, and significant features of Devonian sequences in the southwest Mail Summit measured section, Timpahute Range, Nevada.

Seq. Abbrev.	No. of Feet	Cycls	Significant Features
MDp2	115	2	Silicified stromatolites and laminated black chert, slope
MDp1	130	2	Silty limestone capped with fossil bone-bearing sandstone, slope
Dwr	153	4	Silty, burrowed limestone, partly covered slopes
Dgg	567	29	Carbonate cycles capped by thick (>10 feet) quartz sandstone beds
Dgf	267.5	16	Slightly deeper cycles and more limestone than in adjacent sequences
Dge	235	17	Carbonate cycles capped by thin (<10 feet) quartz sandstone beds
Dgd	405.5	23	*Amphipora* dolopackstone, dark-gray ledges and cliffs
Dgc	188	6	Silty limestone with abundant gastropods & burrows, slope
Dgb3	97	2	Stromatotoporoid and coral reef facies, light-gray cliffs
Dgb2	179	1	Graded bed of carbonate breccia, open-marine fauna, brown-gray cliffs
Dgb1	26	2	Abundant corals, stromatoporoids, and *Amphipora*, limestone cliffs
Dga2	145	8	Shallowing-upward cycles that successively deepen upward, predominately limestone, open-marine fauna, ledges and slopes
Dga1	250	12	Shallowing-upward cycles that successively deepen upward, predominately dolomite, open-marine fauna, ledges and slopes
Dgys	182	10	Yellow, silty dolomite, stromatolites, and cycles capped by thin beds of very fine-grained quartz sandstone, ostracods, forms slopes
Dgfm	135	4	Open shelf fauna, brachiopod *Stringocephalus*, resistant cliffs.
Dsiuah	285	12	Shallowing-upward cycles that successively deepen upward giving an alternating dark and light band appearance, karst breccia, ledges
Dsibc	85	4	Open shelf fauna (corals, stromatoporoids), dark brown-gray cliff
Dsilah	265	12	Alternating intertidal-supratidal or dark and light bands, ledges
Dsicxln	225	4	Coarsely crystalline dolomite capped by karst surface, light-gray to light-gray brown cliffs
Dox2	95	2	Quartz sandstone with hummocky cross-bedding at base, ledge
Dox1	100	4	Burrowed, silty dolomite with flat-pebble conglomerate at base, light-brown slope
Dse3	240+	12+	Light-gray, fine-grained, laminated dolomite, slopes, base concealed
Total	4370+	188+	

The Brown Cliff-Forming Sequence contains more open-shelf fossils and exhibits weaker gamma radiation than any other sequence in the Simonson. A sharp gamma-ray deflection at the base of the sequence is regionally correlative (Figs. 5, 6, 7). Typically, gamma radiation decreases at cycle bases deposited in more open-shelf conditions and increases toward cycle tops deposited in more restricted to supratidal conditions. A slight increase in overall gamma radiation from base to top follows the same pattern of upward-shallowing cycles in other parts of the TMS. Thus, the gamma-ray pattern coupled with fossil distributions suggest that the Brown Cliff-Forming Sequence is an upward-shallowing sequence.

Simonson: Upper Alternating Sequence (285 ft thick, 12 cycles)

A merged LSE and TSE marks the base of the Upper Alternating Sequence. Thinsections display ghosts of intraclasts near the base of the sequence, suggesting a TSE lag. Above the TSE, there is a pronounced lack of open-shelf fossils, and gamma radiation increases abruptly. The bases of the 12 upward-shallowing cycles in the sequence are composed of brown-gray to dark-gray, fine- to medium-crystalline dolostone. The cycle tops are composed of laminated, light-gray to medium light-gray, finely crystalline dolostone. The base of each successive cycle was deposited in deeper water because the bases become thicker, darker and more fossiliferous (Fig. 5). The base of the uppermost cycle contains open-marine corals, brachiopods, stromatoporoids, and echinoderms (Fig. 5).

Extensive karsting at the top of the Simonson Dolomite marks the most persistent exposure surface of the Great Basin Devonian section. Evidence for karsting includes karst breccia, drusy calcite-lined cavities (Fig. 9), increasing crystal coarseness upward, bleaching, and geopetal structures filled with laminated yellow-gray, silty dolostone. These features may extend several hundred feet below the top of the Simonson.

The basis for originally separating the Simonson Dolomite from the overlying Guilmette Formation at its type locality in the Deep Creek Range, Utah, was the change from sucrosic dolostone to limestone (Nolan, 1935). The dolostone breccia Nolan (1935) described at the base of

COMPANY 6 (CONTINUED)

Figure 8. Shown here is a fractured and vuggy coarsely crystalline dolostone in outcrop from below the karsted surface at the top of the Coursels Crystalline sequence in the Simonson. Such dolostones provide an attractive reservoir target for hydrocarbon exploration. Width of view is about 4 feet.

the Guilmette Formation may be related to the karst surface at the top of the Simonson Dolomite, or to a transgressive lag over it. Hoffmeister (1988) included the Dinospiriphalus-bearing Fox Mountain Member as the uppermost part of the Simonson. We regard the Fox Mountain as basal Guilmette because 1) the regional exposure surface separates fine-grained, Fox Mountain limestones from underlying coarsely crystalline and karsted Simonson dolostones, and 2) the regional thickness changes of the Fox Mountain (it may be hundreds of feet in some sections and absent in others, Fig. 6). The Fox Mountain appears to mark within-incised valleys cut into the Simonson.

A sharp increase in gamma radiation marks the base of the Upper Alternating Sequence. The general decrease in gamma radiation of each succeeding cycle upward supports the upward deepening interpretation made from changes in lithology and biofacies (Figs. 5, 6). Gamma ray spikes at the tops of internal upward-shallowing cycles may be due to concentrated wind-blown radioactive detritus. A gamma-ray spike at the top of the sequence is probably caused by radioactive debris concentrated along a karst interval.

Guilmette Formation
(2677 ft thick, 9 sequences, 5 subsequence(s))

Of the five Devonian formations at TMS, the Guilmette Formation is the most lithologically variable. Nine sequences are present (Figs. 5, 6). Above Sequence B at TMS, the section contains mainly of shallow-water, cyclic carbonates that are predominantly dolostone with some limestone and minor sandstone beds higher in the section. Equivalent beds are mainly quartz sandstone at Monte Mountain, and deeper-water, thin-bedded limestone at Tempiute Mountain. Where present, the resistant Fox Mountain forms prominent ledges and cliffs. A good Guilmette marker bed in southern Nevada is the nonresistant Yellow Slope Sequence. Sequence B weathers into massive cliffs, whereas Sequence A and the rest of the Guilmette weather into ledges and slopes.

Guilmette: Fox Mountain Sequence
(135 ft thick, 6 cycles)

The transgressive shelf-forming Fox Mountain Sequence of medium- to dark-gray limestone overlies the regional unconformity at the top of the karsted, light brown-gray Simonson Dolomite. We believe that the Fox Mountain was deposited in Mid Devonian as a topographic low where marine limestone filled a previous erosional valley in the Simonson. Where the Fox Mountain is missing by erosion, or by nondeposition on adjacent topographic highs as at other measured sections, younger sequences overlie the unconformity (Fig. 6).

A sudden deepening at the base of the Fox Mountain Sequence is illustrated by the relative sea-level curve in

COMPANY 6 (CONTINUED)

Figure 9. Vugs and fractures in this piece of core from a depth of 4486 ft in the Coast Canyon #4 well are probably related to the karst surface at the top of the Simonson Dolomite. Note the oil stain in the vugs.

Figure 4. The sequence is composed of four shallowing-upward cycles with lower parts of open-marine, dark-gray, burrowed, brachiopod, crinoid, echinoderm, gastropod lime wackestones and upper parts of supratidal, medium gray to light-gray, laminated dolostone. Each of the four cycles successively begins and ends in shallower water. A regional LSE at the top of the Fox Mountain is marked with a pale-red dolostone paleosol, desiccation cracks, and a change from open marine to restricted-marine fossils. Generally, gamma radiation tracks the relative sea-level curve (Fig. 5, 6). Open-shelf limestones at the base of the Fox Mountain cycles emit less gamma radiation than their supratidal dolostone tops.

Guilmette: Yellow Slope Sequence
(182 ft thick, 10 cycles)

Easily identified on aerial photographs and in the field as a yellow slope, the supratidal, silty dolostone cycles of the Yellow Slope Sequence mark an abrupt change from open shelf limestones of the Fox Mountain (Table 4). The relative sea-level curve also illustrates the change (Fig. 5). Medium- to dark-gray, intertidal calcisphere lime wackestone occurs at the lower part of upward-shallowing cycles. The cycles are capped by pale yellow-brown, supratidal, fossil poor dolomudstone with desiccation cracks. Generally, cycles at the lower and upper parts of the sequence are thicker and their bases were deposited in deeper water than cycles in the middle of the sequence. Characterized by very dark-gray to black stromatolites, the second cycle in the sequence is easily correlated to most other sections in the region. Thin (<5 ft), yellow-gray, fine-grained quartz sandstone interbeds cap two cycles in the section. They contain the first conspicuous quartz grains above the Oxyoke Interval. The ninth cycle contains intertidal calcisphere lime wackestone. Gamma radiation increases sharply at the base of the Yellow Slope Sequence and is high throughout the sequence.

Guilmette: Sequence A
(396 ft thick, 2 subsequences)

Sequence A is divided into two subsequences in the TMS, but the subdivision is not recognized in other sections (Figs. 5, 6). Sequence A1 is predominantly dolostone and Sequence A2 is predominantly limestone (Table 4).

Guilmette: Sequence A1
(250 ft thick, 12 cycles)

A sharp contact separates the coralline- and calcisphere-bearing Yellow Slope Sequence from the coral-, stromatoporoid-, and brachiopod-bearing Sequence A1 (Table 4). Generally, the lower parts of the sequence cycles are composed of open-shelf, medium dark-gray to medium-gray, burrowed stromatoporoid, coral, brachiopod, Amphipora lime wackestone. Supratidal, light-gray, laminated dolomudstones with rip-up clasts cap most of the cycles. Cycles exhibit a general upward-deepening trend from the supratidal Yellow Slope to the open-shelf B2 Sequence and a general decrease in gamma radiation (Fig. 5). A sharp gamma-ray deflection marks the TSE at the base of the sequence. Within the sequence, each cycle begins with a sharp deflection at the limestone base followed by a gradual increase in gamma radiation and dolostone content to the cyclic top.

Guilmette: Sequence A2
(145 ft thick, 8 cycles)

A TSE at the base of Sequence A2 separates predominantly dolostone strata containing common open-shelf fossils of Sequence A1 from the overlying predominantly limestone strata characterized by abundant open-shelf fossils (Table 4). A thin (1-2 ft) bed of distinctive B2 carbonate megabreccia occurs 20 feet above the base of the sequence. It may represent a potential surface of detachment for the Sequence B2 sedimentary megabreccia, and is designated as Unit D, a formation of fluidized bedrock, by Warme and Sandberg (1995, 1996). It is fully detached,

COMPANY 6 (CONTINUED)

then all of Sequence A2 above this level to a great distance in the megabreccia.

Each upward-shallowing cycle in Sequence A2 shows a more pronounced change from the base to the top than in underlying Guilmette sequences. Generally, the base of each cycle is marked by an open-shelf, mudstone dark-gray to medium-gray, stromatoporoid, coral, brachiopod lime wackestone to packstone. Seven of the eight cycles are capped with subtidal, laminated, commonly burrowed, light yellow-gray, fossil-poor dolostone. Two cycles are capped by an extensively burrowed, medium-gray lime basal wackestone of a restricted shelf environment.

A regionally correlative abrupt gamma-ray deflection occurs at the base of Sequence A2 (Figs. 5, 6). The low gamma radiation is interpreted to be caused by carbonate dilution of wind-blown, radioactive detritus deposited in an open-shelf setting. Gamma radiation decreases upward to a distinctive gastropod lime wackestone at the top of Sequence A2, above which it abruptly increases.

Guilmette: Sequence B
(301 ft thick, 3 subsequences)

In the TMS, a thin active sedimentary megabreccia (B2) splits Sequence B into three subsequences: B1, B2 and B3 (Table 4). Two upward-shallowing cycles below the sedimentary megabreccia comprise subsequence B1, and five cycles above the megabreccia comprise B3. Prominent gamma-ray inflections at the base and top of Sequence B are regionally correlative (Fig. 5, 6). Sequence B emits less gamma radiation (as low as 21 counts per second) than any other sequence in the TMS. Except for the gamma-ray spike between B2 and B3, gamma radiation increases steadily from the base to the top of Sequence B.

Guilmette: Sequence B1
(26 ft thick, 2 cycles)

The base of Sequence B1 is a stromatoporoid wackestone that contrasts with the gastropod lime wackestone at the top of Sequence A2. Based on thin sections, the top of Sequence B1 is 40% dolomitized. Sequence B1 gamma radiation decreases steadily upward to the base of B2.

Guilmette: Sequence B2
(179 ft thick, 1 cycle)

Sequence B2 is a unique rock body that occurs in southwestern Lincoln County. It consists of a single graded bed of sedimentary packstone megabreccia with huge (up to 100s of ft long) clasts at the base and mud at the top (Warme *et al*, 1993). Clasts are typically light-gray to medium light-gray limestone (Fig. 10) in contrast to the commonly dolomitized fine grain matrix that gives the outcrop a dark-gray appearance (Fig. 11). The base of B2 varies from section to section. It is defined as the first occurrence of megabreccia matrix above upward-shallowing carbonate cycles of Sequence A, but as described above, a thin (1–10 ft) bed of megabreccia, genetically related to B2, occurs tens of feet below B2. At southwest Mail Summit (TMS), this unusual megabreccia bed occurs 20 feet above the base of Sequence A2, or 391 feet below the top of B2. Apparently, the megabreccia was either fluidized at, or injected into, this horizon by the same catastrophic event responsible for the formation of B2 megabreccia.

At Mount Mountain, 10 miles west of the TMS, B2 lies directly on a thin (145 ft) Sequence A. Farther west, at Troquite Mountain, it cuts down into the top of the Simonson Dolomite (Fig. 6). At TMS, the dark-gray, massive cliffs of Sequence B2 contrast sharply with the cyclic or banded sequences below and the light-gray stromatoporoid reef above (Fig. 11). Fossils present are colonial corals, solitary corals, brachiopods, and abundant stromatoporoids including *Amphipora*. A surface of dissolution marks the upper contact. Warme and Sandberg (1995, 1996) present evidence that the B2 megabreccia is a massive submarine slide triggered by a Late Devonian hypervelocity impact.

A low-intensity and featureless gamma-ray pattern over most of Sequence B2 suggests that the entire sequence was deposited under similar conditions. However, a gamma radiation spike occurs at the top of the sequence and may reflect settling of radioactive dust after the event responsible for the megabreccia.

Guilmette: Sequence B3
(96 ft thick, 5 cycles)

Sequence B3 is a classic lens-shaped, open-shelf, stromatoporoid reef and associated flank beds developed above the B2 megabreccia (Fig. 11). An LSF overlain by a transgressive TSE lag marks the sharp contact with the underlying Sequence B2. At TMS, the B3 reef, a coral-stromatoporoid boundstone, is recrystallized limestone that forms a prominent light-gray cliff above the medium-gray B2 cliffs (Dunn, 1979). Tufa rosa and karst pockets characterize the LSE at the top of the reef and on top of the reef flanks (Fig. 5).

An abrupt gamma-ray deflection at the base of B3 marks the base of reefy strata both on the reef in the middle segment of the measured section and on the reef flank in the upper segment of the measured section (Figs. 2, 5, 6). An open-shelf depositional environment is suggested by the blocky, low-intensity, surface gamma-ray log response that becomes stronger upward (Fig. 5). A gamma-ray inflection marks the LSF at the top of the sequence.

Guilmette: Sequence C
(189 ft thick, 6 cycles)

A pulverized or a dissolution surface separates the base of Sequence C, a saby burrowed, gastropod lime wackestone from the underlying Sequence B (Table 4). Except near the top of the sequence, each successive, upward-shallowing cycle in Sequence C begins and ends with rocks deposited

COMPANY 6 (CONTINUED)

Figure 10. Photo of Sequence B2 megabreccia showing light-gray limestone clasts in a dark-gray dolostone matrix. This sequence may provide an exploration target in northwestern Lincoln County because differential erosion has locally removed limestone clasts from the more resistant megabreccia to create a "rock sponge" (e.g., at Hiko Spring near Hiko). Such diagenetic conditions could make Sequence B2 an excellent reservoir rock.

a shallower water. Shallow-water conditions are suggested by fossil-poor, light-gray limestone that increases in abundance in successive cycles. The lower part of most cycles is composed of medium-gray, burrowed limestone. Cycle tops are generally fossil-poor, medium- to light-gray limestone.

An abrupt gamma-ray inflection at the base of Sequence C is conspicuous on measured sections and well logs (Figs. 5, 6). Gamma radiation intensity increases upward from the open-shelf limes to the more restricted-shelf tops of the shallowing-upward cycles. Generally, Sequence C is more silty than adjacent sequences and produces a characteristic gamma-ray inflection recognizable in most sections throughout the region (Figs. 5, 6).

Guilmette: Sequence D
(406 ft thick, 24 cycles)

Amphipora-rich dolowackestone-packstone characterizes Sequence D (Table 4) and suggests deposition in a restricted-shelf lagoon environment (Nebulr, 1976). A TSE marks the sharp basal contact of this sequence. Above the transgressive lag deposit associated with the TSE is an oncolite-bearing bed. Except for a few minor (10 ft thick or less) limestone intervals and several thin (<5 ft thick) quartz sandstone beds, 90% of Sequence D is an *Amphipora*-rich dolostone that generally shallows upward. Cycles are generally 10 feet thick near the bottom and top of the sequence and 20 feet thick near the middle. Open-shelf, medium-gray, stromatoporoid lime packstone occurs at the base of the lower cycles. In contrast, the bases of the upper cycles are characterized by restricted-shelf lagoon, medium dark-gray to medium brown-gray *Amphipora* dolopackstone. Medium dark-gray, burrowed lime mudstone occurs near the base of many cycles. Dark-gray limestones commonly grade upward to thick beds of dark-gray *Amphipora* dolopackstone. Most cycles are capped by laminated light-gray dolostone. A few cycles are capped by thin (<5 ft) sandstone beds. The light-gray, medium-grained, well-sorted, dolomite-cemented, cross-bedded quartz sandstones, some with desiccation cracks, commonly show a prevailing southwest current direction. Other than a few scattered medium sized quartz grains in the Yellow Slope Sequence, sandstone in cycle 15 near the middle of Sequence D contains the first occurrence of medium-grained quartz above the Guyole sandstone.

A prominent gamma-ray deflection marks the base of Sequence D, which lies on the unconformity at the top of Sequence E. Figures 5 and 6 illustrate a slight increase in gamma radiation from the base to near the middle of the sequence. The gamma-ray pattern is generally smooth over the sequence except for local inflections at cycle tops caused by wind-blown radioactive dust.

COMPANY 6 (CONTINUED)

Figure 51. Classic Devonian stromatoporoid reefs characterize Sequence B3. This light-gray lens-shaped limestone reef lies directly on the dark-gray megabreccia of Sequence B2 at TM5. Note the A and B1 carbonate cycles under the dark gray cliffs of B2. Some reefs in the region are tightly cemented limestone (like this one), but many are dolomitized with open pores and vugs. The reefs vary in thickness from less than 100 feet to over 300 feet.

A regionally correlatable gamma-ray deflection marks the base of Sequence E (Figs. 5, 6). Cycles within the sequence are marked with a gamma ray deflection at its base and a gradual gamma radiation increase toward the top. Gamma ray spikes are common where terrigenous grains are concentrated at the tops of some cycles.

Gailmette: Sequence F (267 ft thick, 13 cycles)

The sharp basal contact of Sequence F occurs where an LSE truncates the uppermost light-gray, laminated dolomicrite of Sequence E and merges with a TSE. A lag deposit of medium dark-gray dolostone overlies the TSE. The sequence is predominantly limestone, except for the uppermost 65 feet composed predominantly of dolostone (Table 3). Medium- to fine-clast dark-gray, medium- to thin-bedded, locally *Amphipora*-bearing, lagoonal, burrowed limestones form the base of most cycles. Many cycles are capped by either supratidal, light-gray, laminated dolomudstone with vapor structures or 1 to 2 feet thick, supratidal, light yellow-gray, fine-grained quartz sandstone beds.

A light-gray fossiliferous lime wackestone deposited in open-marine conditions at the base of cycle 10, above the middle of the sequence, contrasts with the lower, more burrowed limestone typical of other cycles. Each succeeding cycle in Sequence F contains more laminated dolostones that suggest supratidal conditions.

The gamma ray inflection at the base of Sequence F is regionally correlatable (Figs. 5, 6). As observed in other cycles, gamma radiation is generally higher in supratidal rocks and lower in open-shelf rocks. Cycles 9 and 10 provide the highest gamma ray responses and mark the uppermost occurrences of open-marine fauna in the section, including corals, bullhorn stromatoporoids, and brachiopods. Detrital material could have been introduced from the incipient Antler Orogeny to the west and may be responsible for the lack of abundant open-marine macrofossils observed between Sequence F cycle 10 and the Mississippian Joana Limestone.

Gailmette: Sequence G (367 ft thick, 29 cycles)

Sequence G contains the most lithologic variety in the Gailmette Formation and varies greatly in thickness. A regionally correlatable gamma-ray deflection marks the base of Sequence G (Figs. 5, 6). Otherwise, the contact between the light brown-gray dolostone of Sequence F and Sequence G is indistinguishable in the field. Restricted-shelf indicators such as *Amphipora* and gastropods commonly occur at the base of Sequence G cycles. The tops of many cycles are capped with thick (>10 ft) quartz sandstone beds. These units commonly contain desiccation cracks and other supratidal indicators including carbonate mud drapes, stromatolite laminae, and herringbone cross-laminations (Table 4). Many sandstones exhibit tidal channel, bidirectional

COMPANY 6 (CONTINUED)

crossbedding. Dolostone predominates in the lower cycles, whereas limestone predominates in the upper ones. Typically, the top of the Gailmette Formation is marked by a prominent sandstone bed.

The abrupt decrease in gamma radiation at the base of the sequence provides a deflection that can be observed regionally, and a correlative gamma-ray spike occurs near the top of the sequence. Gamma radiation in Sequence G is low compared with subjacent and superjacent sequences (Figs. 5, 6). The last occurrence of *Amphipora* in TM5 occurs at the base of cycle 25. A gamma-ray spike occurs at the top of the cycle in a silty limestone. The disappearance of *Amphipora* and an increase of radioactive detrital material may have been related to another surge of the Antler Orogeny, tentatively corresponding to the increase in gamma radiation in Sequence F, cycles 9 and 10, marking the end of abundant open-shelf fossils in TM5.

West Range Limestone (153 ft thick, 1 sequence)

West Range Limestone (153 ft thick, 4 cycles)

The basal contact of the West Range Limestone is marked by a transgressive surface covered by deeper-water, lime mudstones. These units overlie the uppermost intertidal–supratidal quartz sandstone bed of Sequence G (Figs. 5, 6). Eroding into successive, partly-covered slopes and low ledges, the West Range is composed of a light-gray burrowed lime mudstone that contains few macrofossils. It is commonly mottled or burrowed, silty, argillaceous, and thin-bedded. Cycles are burrowed at the base and laminated at the top (Table 4). A sharp, distinct gamma-ray inflection marks the base of the sequence on surface and subsurface logs (Figs. 5, 6).

Pilot Formation (245 ft thick, 2 sequences)

The poorly exposed Mississippian-Devonian Pilot Formation occurs above the cyclic Devonian carbonates. It is composed of two sequences (Figs. 5, 6). The Mississippian-Devonian boundary lies within the Pilot, probably within Sequence 2. Erosion along a major unconformity cuts out eight consistent zones in the Pilot Formation at Bactrian Mountain, on the north end of the Pahranagat Range (Sandberg and Ziegler, 1971), 7 miles south of TM5. The unconformity may be the sequence boundary between Sequences 1 and 2.

Pilot Formation: Sequence 1 (130 ft thick, 2 cycles)

The base of the Pilot Formation occurs where recessive limestones of the West Range give way to mostly covered intervals bearing fragments of light-gray, silty limestone that produce an increased gamma-ray measurement. The top of the sequence is marked by a thin (5–10 ft), ferruginous, fossil fish plate-bearing quartz sandstone that overlies 20 feet of pale yellow calcareous siltstone.

Two of the highest gamma-ray spikes in the TM5 occur in Pilot Sequence 1 (Figs. 5, 6). The first occurs at the base of cycle 1, and the second occurs near the top of cycle 2 in the ferruginous sandstone. Although thick cover commonly masks the base of the sequence, the contact can be picked on the surface gamma-ray log where there is an abrupt gamma-ray inflection. This is another example of using surface gamma-ray logs to interpret changes in lithology hidden by talus (Chamberlain, 1983).

Pilot Formation: Sequence 2 (155 ft thick, 2 cycles)

The ferruginous quartz sandstone at the top of Sequence 1 is overlain by pale-red cherty siltstone of Sequence 2. Black, laminated, silicified stromatolite beds of cycle 1 are capped by a 2.5-foot-thick bed of bioturbated sandstone (Table 4). The second cycle is a silty limestone that is commonly covered.

The ferruginous sandstone at the top of Sequence 1 produces a gamma-ray peak in contrast to the abrupt gamma-ray deflection at the base of Sequence 2 (Figs. 5, 6). Silicified stromatolites produce another gamma-ray spike at the top of cycle 1. Gamma radiation abruptly decreases at the base of cycle 2, and continues to decrease gradually to the base of the overlying Joana Limestone where there is a distinct gamma-ray deflection as a sharp recessive break.

Mississippian Joana Limestone

The Joana represents a major transgression over the uppermost Pilot Formation Sequence 2 cycle 2. Joana I limestone sequences from the base to the top include: (1) ledge-forming, silty lime wackestone, (2) prominent, cliff-forming crinoid grainstone, (3) prominent cliff-forming crinoid grainstone bedded with chert, and (4) cliff-forming crinoid grainstone. The formation is mostly a medium-gray weathered, massively bedded, crinoid packstone.

Though the Joana–Pilot contact is usually covered with overlying Joana talus, there is a pronounced decrease in gamma radiation at the contact in some of the lowest values measured in the TM5 (Figs. 5, 6, only the base of the Joana is shown). The gamma-ray deflection at the erosional break is interpreted to be a merged LSE and TSE that separates Pilot slopes from overlying Joana cliffs. Gamma radiation increases upward to the top of the Joana Limestone.

DISCUSSION AND APPLICATIONS

Karst surfaces mark LSEs in the Great Basin Devonian that provide regional exploration targets. Commonly, rocks below major LSEs, such as at the top of the Simonson Dolomite, are highly fractured, vuggy, coarsely crystalline, permeable and porous. LSE sequence boundaries can also be marked by erosional surfaces, paleosols, and desiccation cracks. Deeper-water, finely-crystalline carbonates of the lower part of an overlying sequence could provide

COMPANY 6 (CONTINUED)

effective seals over porous reservoir rocks. Other exploration targets involving karsted sequences include the Simonson Coarsely Crystalline Sequence, Guilmette Fox Mountain Sequence, and Guilmette Sequence B. Potential seals, besides open marine, finely crystalline carbonates of the lower part of sequences, include the Yellow Slope Sequence and finely-crystalline, laminated, supratidal carbonates that form the upper parts of many cycles (Fig. 5).

Accurate time-slice paleogeographic reconstructions of Devonian rocks of the Great Basin depend on the quality of sequence identification and correlation. A relative sea-level curve, using boundary characteristics and significant features of sequences, provides a standard to which other measured sections can be compared. In addition, the relative sea-level curve can help interpret both surface and subsurface gamma-ray profiles of the region. Gamma-ray log inflections and deflections closely match excursions of the relative sea-level curve. Gamma-ray inflections and deflections occur either at obvious karsted horizons or at erosional surfaces (LSBs and TSEs) that separate significant changes in lithology and fossil content. They may also occur at specific levels within apparently subtle or transitional lithologic or biostratigraphic shifts.

Karsted surfaces and reef-bearing sequences provide primary targets for petroleum accumulations in the Devonian rocks of Nevada. Prolific oil production at Grant Canyon and Bacon Flats fields in Railroad Valley 55 miles north of TMS is from brecciated, coarsely crystalline dolostone reservoirs that may represent the regional karst surface at the top of the Simonson Dolomite. Specific sequences at TMS probably correlate to Grant Canyon oil field rocks. Stromatolitically laminated dolostone with medium-grained sand from 3961.9 feet in Grant Canyon No. 3 is similar to stromatolitically laminated dolostone with medium-grained quartz sand in the Guilmette Yellow Slope Sequence. Other than the Yellow Slope Sequence, medium-grained quartz in stromatolitically laminated dolostone is rare in the lower Guilmette. Fossils, solution cavities and breccia in the oil-stained core from Grant Canyon No. 1 (4483 ft) are similar to fossils, cavities and karst breccia near the regional Simonson unconformity that underlies the Yellow Slope Sequence (Figs. 5, 6, 9). However, Read and Zogg (1988) ruled out Devonian age solution-collapse brecciation and invoked other mechanisms such as faulting and "storm-blasting" to explain the brecciation.

Devonian Guilmette Sequence B reefs, which are similar in age and composition to the prolific Canadian Devonian reefs, may prove to contain significant volumes of oil in Nevada. Oil is also produced from above the transgressive Onyoke Interval Sequence 1 TSE at Blackburn Field in Pine Valley (Scott and Chamberlain, 1988). This interval could produce elsewhere in the region. Refined Devonian stratigraphy facilitates structural interpretations of the region—especially complexities caused by Mesozoic compression, and to a lesser extent, Tertiary extension.

ACKNOWLEDGMENTS

Many thanks to the reviewers who made useful suggestions that improved the paper: Mark Longman (consultant), Susan Longman (Texaco), Bruce Birge (consultant), David Read (consultant), Walt Petsy (Conoco), Kathy Nichols (USGS), and Charles Gillespie (Tide Petroleum). Thanks also to those who helped with field work and made helpful observations: Bruce Birge, Charles Gillespie, Edgar Perez, Brian Atkinson, Anna Chamberlain and participants of several field trips to the Timpahute Range area. Special thanks to Yvonne Chamberlain who willingly moved the Chamberlain family to the base of the Timpahute Range and encouraged the first author to finish this work. Data from regional measured sections and stratigraphic studies of wells incorporated into a regional reservoir rock study in 1992 was provided by CEDAR Strat Corporation. Chris Hansen and Greg Cameron did much of the early field work. Bruce Birge and Alan Chamberlain picked the Devonian sequences and correlated them with surface and subsurface sections throughout the eastern Great Basin. This work was supported in part by NSF Grant EAR-9005324 awarded to Colorado School of Mines, John E. Warme, Principal Investigator.

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ORGANIZATION 1

THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the NEVADA TEST SITE and
OFF-SITE LOCATIONS IN THE STATE OF NEVADA

Nevada Test Site EIS Hearing Comment Sheet

Meeting Location: University of Nevada, Reno
Meeting Date: 5/19/96

Please Enter Your Name, Organization and Address Below:

Steve Alastuey — Citizen Alert & Recreation Association (Great Basin Mtn. Bicycle Outdoor)
Your Name — Organization

1027 Riverside Drive #13 — Reno — NV — 89503
Street Address — City — State — Zip Code

Thank you for attending this hearing. Please use this sheet (and attachments if needed) to submit us of your written comments on this EIS.

When commenting, please indicate beside your comment the applicable issue category number from the list below. This will help us to ensure that your comment is considered in the relevant section of the EIS. You may identify additional issue categories as needed.

1	Land Use	12	Cultural Resources (includes American Indian Perspectives)	16	Nuclear Policies	22	Waste for Others Program
2	Transportation			17	Big Explosive Experiment Facility	23	Alternative 1 - Continue Current Operations (No Action Alternative)
3	Site Support Activities						
4	Socioeconomics	13	Occupational and Public Health and Safety/Radiation (includes Human Health Risk)	18	Defense Program	24	Alternative 2
5	Geology and Soils			19	Waste Management Program	25	Alternative 3 - Discontinue Operations
6	Surface Hydrology						
7	Groundwater			20	Environmental Restoration Program	26	Alternative 4 - Expanded Use
8	Biological Resources						
9	Air Quality	14	Environmental Justice	21	Mandatory Research and Development Program	27	Alternative 4 - Alternate Use of Withdrawn Lands
10	Noise	15	DOE Environmental Policies and Procedures				
11	Visual Resources					28	NEPA Process
						29	Other

TOPIC NUMBER — COMMENT (continue on back if needed)

1 (1) Lands should be made safe, free from threats for human use/exposure
2 3 (2) Transportation - air, ground, prevention and safe possibility of accident (i.e. ...
(3) NTS should be made safe, and therefore not threatening, to absorb ...
4 tourists, outdoor recreationists, residents; the reputation of the
5 region cannot prosper if people are fearful of contamination.
6 (4) Soil contact must be safe & non-contaminant.
(5) Precipitation shouldn't be contaminated by contact with toxic
7 soils, water runoff travels through ravines & streambeds, and
carry contaminants over wider areas.
(7) Groundwater/aquifers can transport contamination very long
distances through the known rock fissures
8 Seismic activity is active, including ever
Please hand this form in today or mail before May 3, 1996 to:
U.S. Department of Energy — Environmental Impact Statement — P.O. Box 16059 — Las Vegas, NV 89193-8056
occasional earthquakes, which widen
existing fissures and create new ones.

over →

ORGANIZATION 1 (CONTINUED)

9 (5) Flora and fauna are incapable of warding off contaminants. Mutations are known to occur from exposure to nuclear toxicity (i.e. stepping). Plants transfer contaminants from soil to first-order consumers, and second-order consumers get it from the herbivores, and etc. on the food chain. Nuclear toxins are known to create diseases; i.e. leukemia.

10 (9) "Downwinders" are victims of radiation who contract illness from airborne contamination. These people (and animals plants) are known victims.

11 (11) I never heard of noise except from use explosives which release the radiation.

12 (11) Visual appeal of the region becomes degraded by the knowledge of its toxicity.

13 (12) Amer. Indian cultural sites exist; they should be preserved as part of their heritage and viable cultural/social resource.

14 (13) Health & safety involving any use of the area should be first priority this encompasses any human use, which is affected by any form of contaminant transportation/exposure.

15 (14) & (15) Environmental Justice and DOE policies should work together to make all the facts and information readily accessible to all the public. Repressed information is useless to people; partial information is deception because it lacks validity for our evaluation. Justice is having all data to keep us out of trouble, and for a basis to develop safe, practical solutions.

16 (19) Maximized safety through viable detoxification techniques investigated.
17 18 (20) same as #(19) —— (21) Spend more on sustainable preventive
19 (25) Expand use by making it safe to be there. Any recreational,
20 & (26) educational, industrial use is precluded by radiation exposure.
21 (27) live up to highest standards of NEPA; don't cut corners.

ORGANIZATION 2

UNLV

April 18, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Dear Dr. Elle:

Attached are my comments on the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (NTS EIS). I am a Nevada Risk Assessment/Management (NRAMP) Technical Team member and therefore have a background relating to many of the issues addressed in the NTS EIS. Specifically, my focus in reviewing the document was on the topic of groundwater contamination.

I have included both general comments and page-specific comments. All comments have corresponding recommendations. I believe the recommendations will make the document a more appropriate communication tool. Many of the comments relate to specific points which I believe need to be addressed in order to produce a final product which is an honest portrayal of the site and potential future use.

Sincerely,

Tod E. Johnson
Environmental Modeling
Nevada Risk Assessment/Management Program

cc: W.B. Andrews
Nevada Test Site Citizen Advisory Board

Harry Reid Center for Environmental Studies
4505 Maryland Parkway • Box 454009 • Las Vegas, Nevada 89154-4009
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ORGANIZATION 2 (CONTINUED)

Comments on the Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, Volume 1, Appendix H, "Human Health Risks and Safety Impacts Study" and Selected Groundwater-Related Sections in Other the NTS EIS Volumes.

April 1996

Tod Johnson, Environmental Modeling
Nevada Risk Assessment/Management Program
Harry Reid Center for Environmental Studies
Box 454009
4505 Maryland Parkway
Las Vegas, NV 89154-4009

GENERAL COMMENTS:

G-1:

1 **Problem**: One of the Land Use Alternatives listed in the EIS involves turning back some of the land (70%) to public lands inventory. As such, the evaluation of the risks to the public should have included estimation of risk at the potential new boundaries. Vol. 1, 3-27 states that return of the land would be evaluated, but only to the US Bureau of Land Management (BLM) for public use (not directly to the public, the State, Nye County or to the sovereign nations). Because it would be available for public use, even under the control of the BLM, many exposure scenarios impacting the public should have been considered.

2 **Recommendation:** The exposure scenarios should include the ingestion of drinking water by casual/recreational public visitors to the area and include worker risk scenarios consistent with relatively remote locations (i.e. partial residence time on the site).

G-2:

3 **Problem**: Modeling shows that contaminants from underground testing are likely off the NTS and CNTA, and likely will be off the Shoal Site in the future. This understanding is not reflected in the document. Also, because site characterization is quite limited, the risk results are quite uncertain. This understanding is not reflected in the EIS. The predicted concentrations, locations, duration and potential hazards must be included because no intervention is described.

4

5 **Recommendation 1**: The Draft NTS should be revised to remove conflicting sections and misleading statements which imply the underground contamination is not leaving the site.

6 **Recommendation 2**: The document should also be revised to include honest, clear discussion of the uncertainties.

ORGANIZATION 2 (CONTINUED)

7 **Recommendation 3:** Because of the large uncertainties inherent in the modeling, the worst-case analyses should be presented, not the least-conservative.

PAGE-SPECIFIC COMMENTS

Draft NTS EIS Summary

S-1 EIS Summary, Page S-19, lines 11-13:

8 **Problem**: The text states that groundwater models suggest there will be no migration out of the NTS boundaries. That statement is in conflict with modeling from other sources (Daniels et al., 1993, Andricevic et al., 1994). Modeling in those sources indicated migration was possible, and estimate the risks related to the transport. The risk values correspond to tritium concentrations greater than detection limit (1 pCi/L) and greater than background (approx. 10 pCi/L). Also, some of the locations for which

9 modeling was conducted (NTS EIS Human Health Risk and Safety Impacts Study, Vol. 1, Appen. A, page 2-17, lines 11-14) do not have corresponding results listed in the EIS. Therefore, one cannot test the "no migration off site" statement for those locations.

10 **Recommendation**: Delete the "no migration" expected statement. Say instead that modeling does indicate migration off the site sometime in the future.

S-2 EIS Summary, Page S-19, lines 15-18

Problem: The text implies that groundwater contamination will never be a problem simply because no contamination has been detected in off site monitoring wells. That is a poor argument for several reasons. First, the contamination could move off site in

11 narrow plumes and miss the monitoring wells. Second, the contamination may be moving toward the wells, but not have reached it yet. Third, the modeling report for the area (Chapman et al., 1995) indicates contamination will likely move off the site sometime in the future. If the conservative estimate in the report is used (which includes limits of uncertainty in some of the parameters), a concentration of 720,000 pCi/L could occur at the boundary.

12 **Recommendation**: Add text to indicate that the groundwater modeling indicates movement off the site could occur sometime in the future.

S-3 EIS Summary, Page S-19, lines 20-27:

Problem: The text implies no contamination has left or will leave the CNTA from underground sources. This does not match the conclusion from results presented in the NTS EIS Human Health Risks and Safety Impacts Study (Vol. 1, Appen. A, page 2-

13 17, lines 22-26). The specific discussion of the CNTA modeling describes concentrations as high as 1.2×10^6 pCi/L at the boundary. There is no existing well at the location, but the text in the Summary is written in such a way as to imply there is no release beyond the site boundary. It states that "transport could already be occurring",

ORGANIZATION 2 (CONTINUED)

13 (cont.) which does not clearly communicate the relevant detail that contamination has likely already left the site.

14 **Recommendation**: Modify text to include the statement: "Ground water modeling has indicated contamination has likely left the site boundary, but has not been identified in any existing well."

Volume 1, Appendix H, "Human Health Risks and Safety Impacts Study"

S-4 Page ES-2, Lines 4-7:

Problem: The sentence states that tritium is never expected to exceed measurable concentrations at the site boundaries of the NTS and Shoal. However, on page 5-1, the report states the detection limit is 1 pCi/L. On the same page (5-1), the report

15 states an estimate of 280 pCi/L at the boundary some time in the future. Therefore, tritium is expected to leave the NTS and Project Shoal boundaries in measurable concentrations in the future.

16 **Recommendation**: The text on page ES-2 should be corrected to state that contaminants are expected leave the site boundaries at every site (not just the CNTA).

S-5 Page 2-17, lines 15-16:

Problem: The information describing the method of calculation of the NTS tritium source is poorly described in the EIS and may be incorrect. The text indicates the concentrations used for model inputs came from direct measurements from shot cavities. This does not appear to be the case. NRAMP has a version of the results and code from the program listed in the EIS. The description listed does not indicate the values came direct measurement. Rather, the actual method used appears to combine

17 classified information regarding cavity volume with averages of recently declassified tritium estimates. The assumption appears to be that the tritium is, on average, distributed within a volume of water approximately equal to the sum of the shot cavities. The merits of the assumption can be debated, but only if the method is described to the public in the EIS document. I believe the public should not be led to think the data came from site-specific measurements (which may or may not exist, but which do not appear to have been used in the calculation of results).

18 **Recommendation 1**: Briefly describe the method used to calculate the concentrations, so the public is more clear about the uncertainties of the estimate. (The method used to calculate the concentrations is not classified.)

19 **Recommendation 2**: Briefly list which shot(s) was (were) chosen for the modeling. Was the shot closest to the boundary-of-concern used? Or was one that was considered by the DOE to be representative in yield and location used?

ORGANIZATION 2 (CONTINUED)

S-6 Page 2-17, lines 11-14:

20 **Problem**: The EIS states the MC_TRANS code was used to simulate the movement of tritium from test locations on Pahute Mesa and Yucca Flat to downstream locations within the NTS, to the towns of Beatty and Lathrop Wells, and to the boundary of the NTS south of Mercury, Nevada. Where are the results for the locations within the NTS boundaries? Where are the results for the towns of Beatty and Lathrop Wells? It seems that the only result listed is for a distant, unlikely location.

21 **Recommendation**: The results of the other locations should be presented for completeness and honesty (the locations listed could have higher risk values than the single NTS location listed in the EIS).

S-7 Page 2-17, lines 11-14:

22 **Problem**: Not all of the relevant risk calculations have been presented. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which is 19 km downgradient. The risks were estimated to be as high as 2×10^{-3} at the boundary and 1.4×10^{-4} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

23 **Recommendation**: Include the Oasis Valley in list of locations that have completed calculations. (The high estimate of risk at the boundary does not need to be included in this EIS, because it appears to be US Air Force-controlled property adjacent to the NTS at that point, and is therefore still under administrative control for the near-future. And the EIS is not considering US Air Force property to be available for public access in the scope of the EIS.)

S-8 Page 2-17, lines 16 and 17:

24 **Problem**: Regarding the risk calculations for the NTS boundaries, the equations listed in Attachment A may or may not be the equations used to calculate the values, but are incomplete if the groundwater flow and contaminant transport parameters are not available for review. (The document describing the results has apparently not been made available to the public or evaluating groups such as NRAMP.) Therefore, the equations listed in Attachment A are of limited value.

25 **Recommendation 1**: Release the document containing the data and results for the MC_TRANS modeling. (The transport calculations are not likely classified, nor is the model treatment of the source term.) The equations do not appear to 26 have been used for the offsite locations (Shoal and CNTA).

27 **Recommendation 2**: If Recommendation 1 cannot be followed because the modeling report is not finished, then the EIS results should be listed as interim results.

ORGANIZATION 2 (CONTINUED)

28 **Recommendation 3**: If Recommendation 2 cannot be followed, do not cite the equations likely used -- the public cannot test their application or relevance.

S-9 Page 2-17, lines 23-29

29 **Problem**: The equations (or even summation of the method) used for calculating the risks at the off-site locations (within the Solute Flux method) are not listed in the EIS document. An approach using an age-specific intake distribution, time-dependent tritium concentrations, and age-dependent health effects was used.

30 **Recommendation**: The method should be described (briefly) or is should not 31 be used to calculate the values. If the risk calculation method within the Solute Flux method) is not to be used, the more simple equations listed in back of the EIS would have to be used, causing new results.

S-10 Page 5-1, Lines 15-18:

32 **Problem**: The risk assessment for scenarios involving ingestion of water are said to be identical for each alternative. As stated in comment G-1, above, Land Use Alternative 4 involves turning back some of the land (70%) to public lands inventory. Therefore, the land uses are not sufficiently similar to do only one water ingestion scenario that would be applicable to all.

33 **Recommendation**: The evaluation of the risks to the public should be corrected to include estimation of risk at the potential new boundaries for Alternative 4.

S-11 Page 5-2, Table 5-1:

Problem: The report lists a table of health risks to individuals, summarizing work from several different reports.

34 **Recommendation**: Looking at the original texts, the risks included in EIS work were the minimum of a variety of scenarios listed in the original texts. The values in the original text include reasonable (according to the authors of the texts) inclusion of uncertainty. Uncertainties which were in the original texts include uncertainties in the mean velocity of the groundwater and greater areal variation in hydraulic conductivity. In some of the cases, the risk including the higher uncertainties is still de minimus (less than 10^{-6}). In other cases, such as Project Shoal, the risks increase from a de minimus level to levels that have, for other sites, been considered significant. I recommend changing Table 5-1 to include the more conservative values listed in my attached table.

S-12 Page 5-2, Table 5-1:

35 **Problem**: The report lists a table of health risks to individuals, summarizing work from several different reports. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which

ORGANIZATION 2 (CONTINUED)

35 is 19 km downgradient. The risks were estimated to be as high as 2×10^{-3} at the boundary and 1.4×10^{-6} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

36 **Recommendation**: Include the value for the risk to residents near the Oasis Valley in Table 5-1. (The high estimate of risk at the boundary does not need to be included in this EIS, because it appears to be US Air Force-controlled property adjacent to the NTS at that point, and is therefore still under administrative control for the near-future. And the EIS is not considering US Air Force property to be available for public access in the scope of the EIS.)

S-13 Page 5-3, lines 8-9:

37 **Problem**: Regarding concentrations and arrival times listed in the EIS text for Project Shoal, the values increase when uncertainty (listed in the source document, Chapman et al., 1995) is included. For the Project Shoal Area, if listed uncertainties are included, the peak tritium concentrations in the groundwater could be as high as 720,000 pCi/L, arriving 71 years after the test. The number cited in the EIS is 280 pCi/L at 206 years.

38 **Recommendation**: Correct the text to include the values resulting from the higher levels of uncertainty.

S-14 Page 5-1, lines 25-26:

Problem: The evaluation of the risk calculations of the NTS boundary near Mercury is more difficult to conduct than for the offsites (Shoal and CNTA), because the report referenced for the results is apparently not publicly available. NRAMP has a version of the results and code from the program listed in the EIS, but the calculation included in the EIS is not given in the documentation available to NRAMP. From initial calculations conducted by NRAMP, it is unlikely that there is substantial risk at the boundary near Mercury. However, other boundary locations may be more appropriate to list in the EIS. For instance, the boundary near Pahute Mesa has shot locations much closer to the boundary and has hydraulic gradients which could move the contaminants past the boundary. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which is 19 km downgradient. The risks were estimated to be as high as 2×10^{-3} at the boundary and 1.4×10^{-6} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

39

40 **Recommendation 1**: Provide more of the framework for the parameters and calculations used to produce the Mercury boundary number.

41 **Recommendation 2**: Include the Pahute Mesa to Oasis Valley results in discussion.

ORGANIZATION 2 (CONTINUED)

REFERENCES

Andricevic, R., Daniels, J.I. and Jacobson, R.L., 1994. "Radionuclide migration using a travel time transport approach and its application in risk analysis." J. of Hydrology, Vol. 163, pp. 125-145.

Daniels, J.I., Andricevic, R. Anspaugh, L.R. and Jacobson, R.L. 1993. "Risk-based screening analysis of ground water contaminated by radionuclides introduced at the Nevada Test Site (NTS)." Tech. Rep. UCRL-ID-112789, Lawrence Livermore National Laboratory, Livermore, CA.

ORGANIZATION 3

UNLV

April 17, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Dear Dr. Elle:

I am submitting comments prepared by the Nevada Risk Assessment / Management Program (NRAMP) on the Waste Management Programmatic Environmental Impact Statement (DOE/EIS-0200-D) for your consideration in the NTS Environmental Impact Statement (DOE/EIS 0243). The majority of the comments ask for clarification of the scope and impacts related to the transportation of radioactive waste. It is appropriate that both documents address theses issues in a consistent manner.

1

Major discrepancies between current Nevada Test Site and other programmatic environmental documents related to the shipment and disposal of Low Level Waste (LLW) contribute to an incoherent set of federal proposals for public comment. The total number of predicted health effects and the percentage due to radiation effects are potentially significant in other documents.

2

Specific preferences for the alternatives described in the NTS-EIS could not be developed based on the lack of consistent information. It is apparent, however, that the high cost of development of LLW disposal and treatment facilities at distributed locations and the relatively low costs of transportation will likely result in an increased need and use of Nevada for the disposal of LLW. Increased use of rail transportation could significantly reduce both risk and cost for all alternatives except there is no offsite transportation.

3

Detailed comments are enclosed.

Sincerely,

W.B. Andrews

RECEIVED APR 25 1996

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ORGANIZATION 2 (CONTINUED)

Table referred to in Comment 34

Table 1. Considering Limits of Uncertainties in Original Documents

Test Location	Receptor Location	Arrival Time of Peak Concentration (yr)	Dose (rem)	Radiation LCF	Radiation Detriment
Yucca Flat	Mercury	* (EIS: 100)	* (EIS: 3.0×10^{-6})	* (EIS: 1.5×10^{-11})	* (EIS: 7.0×10^{-12})
Project Shoal Area	Eastern Boundary	**71** (EIS: 206)	**4** (EIS: 1.6×10^{-5})	**2×10^{-3}** (EIS: 8.0×10^{-7})	**9.2×10^{-4}** (EIS: 3.7×10^{-7})
Project Shoal Area	Nearest Public Well	** (EIS: 278)	**0.08** (EIS: 2.0×10^{-7})	**4×10^{-5}** (EIS: 1.0×10^{-10})	**1.8×10^{-5}** (EIS: 4.6×10^{-11})
Central Nevada Test Area	Central Nevada Test Area Boundary	**8** (EIS: 15)	**11** (EIS: 8.0)	**5.3×10^{-3}** (EIS: 4.0×10^{-3})	**2.4×10^{-3}** (EIS: 1.8×10^{-3})
Central Nevada Test Area	Nearest Public Well	**117** (EIS: 410)	**6×10^{-7}** (EIS: 1.8×10^{-33})	**3.2×10^{-10}** (EIS: 9.0×10^{-34})	**1.5×10^{-10}** (EIS: 4.1×10^{-34})

* Original documentation not available
** Not listed in original document

8

Comments on the Nevada Test Site Environmental Impact Statement, Appendix I, Transportation Study (DOE/EIS 0243)

April 1996

Public interest is high for transportation issues. The DOE Nevada Operations Office, noted this interest in their efforts to work with members of the public, elected officials, American Indian tribal governments and private issue advocacy groups in the development of a technical report on transportation impacts associated with the Nevada Test Site Environmental Impact Statement (DOE 1995a). These groups expressed concern about continued and possible expansion of transportation of low level radioactive waste by truck on public highways in the Las Vegas valley. In response to these concerns, the DOE addressed the possible use of alternative truck routes, construction of rail access to the NTS and intermodal truck/rail shipments to the site.

Technical Adequacy of the NTS-EIS Document

This review included a comparison the NTS-EIS to other current DOE environmental documents and an evaluation of risk management opportunities related to transportation of radioactive wastes. **Discrepancies identified in current environmental documents related to the shipment and disposal of Low Level Waste (LLW) contribute to an incoherent proposal from the DOE-EM program for public comment.** A comprehensive response to the NTS-EIS is not possible without resolution of these discrepancies.

4

The NTS-EIS transportation study (DOE 1995a) describes shipping volumes for Low Level Waste (LLW) importation for the next ten years. The EIS land use case of "continue current operations" shows radioactive shipments from 12 offsite locations at a rate of 678 shipments per year. The EIS case of "expanded use" shows radioactive shipments coming for the next 10 years from 29 offsite locations with an average annual volume of 3946 shipments per year.

The Waste Management Programmatic EIS (DOE 1995c) was released in September 1995. The PEIS describes alternative strategies and impacts for the management of wastes from ongoing and past DOE operations that are anticipated to be shipped to and from various treatment and disposal sites over a 20 year period. Wastes from site remediation are excluded from the assessment. Implementation of a centralized storage/disposal option at the NTS for LLW, LLMW and HLW would result in the maximum number of waste shipments. A combined total of 295,000 truck shipments and more than 106,000 rail shipments could occur under this alternative.

5

THE NTS-EIS CONTAINS MAJOR DISCREPANCIES IN THE NUMBER OF POTENTIAL SHIPMENTS OF LLW COMPARED TO WM-PEIS ESTIMATES

Waste shipment numbers in Table 1 were summarized from the WM-PEIS. They are

reported on an annual basis to allow comparison to the NTS-EIS. Shipping volumes in Table 1 are up to 3 times higher than volumes reported in the NTS-EIS.

5 cont.

Table 1. Annual Shipments from the Waste Management PEIS for Nevada Storage Options

Waste Form	No Action	Decentralized	Regionalized	Centralized
Low Level Mixed Waste	No Shipments	5	1 - 482	0 S/year out, Ship to Hanford
Low Level Waste	3498	0	0 - 2945	0 - 12,400
Transuranic Waste	0, Store Onsite	4.5 / yr out Ship to WIPP	4 / yr out Ship to WIPP	4 / yr out Ship to WIPP
High Level Waste	Not Included in PEIS	Not Included in PEIS	Not Included in PEIS	Not Included in PEIS

6

ENVIRONMENTAL RESTORATION WASTES ARE NOT INCLUDED IN THE WM-PEIS IMPACTS AND COULD RESULT IN MUCH HIGHER WASTE VOLUMES FOR DISPOSAL AT THE NEVADA TEST SITE

The *Baseline Environmental Management Report (BEMR)* (DOE 1995b) was used in the WM-PEIS as the basis of a sensitivity study for waste shipment volumes. Results of an WM-PEIS sensitivity study (appendix B) indicated that disposal volumes could be up to 60% higher than those shown in Table 1 based on the WM-PEIS assumption that only 5% of the LLW available from site restoration would be transported to an offsite location for disposal. The reasonableness of these results could not be determined since the basis for the shipping volume estimate is based on an unpublished draft of the BEMR. The impacts of increased LLW volumes was not estimated in Appendix B.

7

RISK LEVELS REPORTED IN THE NTS-EIS AND THE WM-PEIS ARE NOT CONSISTENT. THE WM-PEIS RESULTS ARE MUCH MORE SIGNIFICANT AND HAVE A HIGH FRACTION OF RADIOLOGICAL HEALTH EFFECTS

8

Risk results are provided in the two EISs. The NTS-EIS risks for Nevada are summarized in table 2. The NTS-EIS reported relatively low total risks and the percentage of health effects due to the radiological nature of the cargo are a small percentage of the total risk. Results of the WM-PEIS evaluation of LLW risks are shown in Table 3. No Nevada-specific results were included in the WM-PEIS for the transportation of wastes. The total number of predicted health effects and the percentage of health effects due to radiation are potentially significant.

ORGANIZATION 3 (CONTINUED)

Table 3. Cancer and Non-cancer Health Effects (HE) for LLW Disposal

	Treat. Worker Mech. HE	Treat. Worker Cancer HE	Percent Treat. Worker Cancer HE	Disposal Worker Mech. HE	Disposal Worker Cancer HE	Percent Disposal Worker Cancer HE	Truck Cancer HE	Truck Mech. HE	Percent Truck Cancer HE	Rail Mech. HE	Rail Cancer HE	Percent Rail Cancer HE
No Action	3	1	25	4	3	43	5	12	29	0.6	1	37
Decentralized	2	1	33	6	2	25	<1	<1	n/a	<1	<1	n/a
Regionalized 1	2	1	33	6	2	25	<1	1	0	<1	<1	n/a
Regionalized 2	5	1	17	4	2	33	<1	1	0	<1	<1	n/a
Regionalized 3	2	1	33	5	2	29	2	3	40	<1	<1	n/a
Regionalized 4	5	1	17	4	2	33	2	3	40	<1	<1	n/a
Regionalized 5	5	1	17	4	2	33	2	4	33	<1	<1	n/a
Regionalized 6	3	1	25	6	2	25	3	10	23	0.6	0.6	50
Regionalized 7	3	1	25	6	2	25	4	10	28	0.6	0.6	50
Centralized 1	3	1	25	1	3	75	16	37	30	1.7	2.3	42
Centralized 2	3	1	25	1	3	75	15	37	29	1.7	2.3	42
Centralized 3	5	1	67	1	2	67	15	35	30	1.6	2.3	41
Centralized 4	5	1	67	1	2	67	14	37	27	1.7	2.3	42
Centralized 5	4	2	33	1	2	67	15	37	29	1.7	2.3	42

Data Compiled from Tables 5.3-1 and E-16, WM-PEIS

W. B. Andrews Comments on the NTS-EIS, April 1996

ORGANIZATION 3 (CONTINUED)

Table 2. Offsite Population Transportation Risks from the NTS-EIS for 10 years - Low Level Waste & Safe Secure Trailers

	Deaths (Latent & Mechanical)	Injuries (Mechanical)	Cargo - Related (latent cancers)	Cargo Percentage of Total
Alternative 1 - Present Operations	2	27	0.002	0.1
Alternative 2 - Discontinue Operations	minimal	minimal	minimal	n/a
Alternative 3 - Expanded Use	7	97	0.06	0.8
Safe Secure Trailers (30 shipments)	n/a	n/a	Incident Free- 0.000016 Accidents - 0.000007	n/a

n/a - not available

Criteria That Should Be Considered in Selecting Preferred Alternatives and Making Final Decisions

Relative to LLW treatment, transportation and disposal, it is apparent from the results of the NTS-EIS that transportation is the dominant source of public risk and that treatment and disposal are dominant for worker risks. It is also apparent that development of disposal facilities is expensive relative to transportation. This presents decision makers with the dilemma of trading off dollar savings for potential increases in public and worker risks.

Preferences for Alternatives Evaluated for LLW

Specific preferences for the alternatives described in the NTS-EIS could not be developed because of the lack of consistent information in the three environmental documents. It is apparent, however, that the high cost of development of LLW disposal and treatment facilities at distributed locations and the relatively low costs of transportation will likely result in an increased need and use of Nevada and/or other sites for the disposal of LLW. Public review of revisions to the NTS-EIS that reconcile the previous comments on waste volumes and risk along with additional opportunities for public education on the overall DOE-EM program would increase public understanding and comment.

W. B. Andrews Comments on the NTS-EIS, April 1996

ORGANIZATION 3 (CONTINUED)

Table 4. Risk and Cost Impacts of Using Rail for LLW Transportation

Alternative	Total Fatalities System (Truck)	Total Fatalities System (Rail)	Risk Reduction (Use Rail)	Risk Reduction Percent (Rail)	(Billions of 1994 Dollars) Total (Inc. Truck Costs)	Rail Savings	Total (Inc. Rail Costs)
No Action	28	12.6	15.4	55%	17.9	-0.07	17.97
Decentralized	11	11	0	0%	16.3	0.03	16.27
Regionalized 1	12	11	1	8%	16.2	0.04	16.16
Regionalized 2	14	12	2	14%	20	0.04	19.96
Regionalized 3	15	10	5	33%	14.7	0.16	14.54
Regionalized 4	17	12	5	29%	19.7	0.15	19.55
Regionalized 5	18	12	6	33%	19.6	0.26	19.34
Regionalized 6	25	13.2	11.8	47%	12.7	0.48	12.22
Regionalized 7	26	13.2	12.8	49%	13.6	0.49	13.11
Centralized 1	61	12	49	80%	11.9	2.02	9.88
Centralized 2	60	12	48	80%	11.8	1.82	9.98
Centralized 3	59	12.9	46.1	78%	17.9	1.91	15.99
Centralized 4	60	13	47	78%	17.8	1.72	16.08
Centralized 5	61	13	48	78%	14.9	2.02	12.88

Data Compiled from Tables 5.3-1, 5.3-2 , and E-16, WM-PEIS

W. R. Andrews Comments on the NTS-EIS, April 1996

6

ORGANIZATION 3 (CONTINUED)

9 **Increased use of rail transportation could significantly reduce both risk and cost for all alternatives except in the case where there is no offsite transportation.** Table 4 summarizes information from the WM-PEIS. The WM-PEIS indicates a slightly higher cost for the "no action" case if rail transportation would be used for all sites. All other cases show cost reductions ranging from $30 million to $2 billion. Risks would be significantly reduced for all alternatives except where transportation is not used. These reductions range from 8% to 80% of the total system risk.

10 **If rail transportation were used, risks of all the alternatives for LLW disposal would be comparable in terms of their total predicted health effects.** It is, of course, a very crude estimate to sum risks of the public, workers, and future generations, but when the total risk magnitudes are similar, discussions about the acceptance of risk could have a different tone than the current situation where the motivating public and roadside residents would experience the greatest portion of total risk in order to achieve relatively modest reductions in future risks to communities that are near DOE facilities.

11 **Rail transportation could reduce concerns about the EM activities in Nevada.** Currently truck shipments travel primarily over Hoover Dam, through the largest cities in Nevada and then to the NTS due to routing restrictions imposed by current US Department of Transportation regulations. Rail shipments could allow greater DOE discretion in the development of alternative routes that could avoid these areas because there are currently no rail routing regulations and intermodal transfer points could be chosen that would better meet local needs.

References

DOE 1995a, *Nevada Test Site Environmental Impact Statement, Appendix I, Transportation Study*, DOE/EIS 0243, DRAFT, United States Department of Energy, 1000 Independence Avenue, Washington, DC 20585, January 1996

DOE 1995b, *The 1995 Baseline Environmental Management Report, Estimating the Cold War Mortgage*, DOE/EM-0232, US Department of Energy, Washington DC, March 1995

DOE 1995c, *Waste Management Programmatic Environmental Impact Statement*, DRAFT, United States Department of Energy, 1000 Independence Avenue, Washington, DC 20585, September 1995

W. R. Andrews Comments on the NTS-EIS, April 1996

5

ORGANIZATION 4

UNLV

April 18, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle,

I am submitting comments for your consideration on the Nevada Test Site Environmental Impact Statement (NTS EIS). I am a member of the Nevada Risk Assessment/Management Program (NRAMP) Technical Team at the Harry Reid Center for Environmental Studies, UNLV. The majority of my comments attempt to clarify technical discrepancies rather than dwell on philosophical approaches to improving the NTS EIS methodologies.

In addition, I am also submitting several comments based on a letter to the NRAMP Principal Investigator, Mr. William B. Andrews, from Mr. David B. Leclaire, the Deputy Assistant Secretary for Program Support, Defense Programs. In this letter (which is attached), Mr. Leclaire recommends that I look at specific areas of the NTS EIS for interesting information regarding the radiological source term. For the record, I did not find any new information in these sections of the NTS EIS and my doctoral thesis (which was completed and successfully defended in January, 1995) did not include any aspect of thermonuclear weaponry, but rather experimental investigations of fusion reactor engineering safety issues.

Itemized comments are attached in the order they come up in the NTS EIS. There is no priority given to earlier comments than later comments. I feel my comments are rarely contentious and are meant to highlight potentially significant technical or perceptional problems with the NTS EIS.

Sincerely,

Anthony E. Hechanova

Anthony E. Hechanova, Ph.D.
Nuclear Engineering

cc: Earle Dixon (CAB)
David B. Leclaire (DOE)
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ORGANIZATION 4 (CONTINUED)

Itemized Comments on Human Health Risks and Safety Impacts Study in the NTS EIS (Vol. 1, App. H) with Additional Comments in Response to Mr. David B. Leclaire's Letter (attached)

by Anthony E. Hechanova, Ph.D.
Nuclear Engineering
Harry Reid Center for Environmental Studies
University of Nevada, Las Vegas
tel: (702) 895-1457
April 16, 1996

Number	Location	Comment
1 | 1	v 1, p 4-8, li 1-22	***Problem:*** Table 4-1 is not properly referenced. ***Recommendation:*** Cite the references from which values are given in Table 4-1. For example, as regards to the Surficial Soils, I am familiar with Radionuclide Inventory and Distribution Program (RDIP) reports and figured those would be the appropriate references from the References Section 4.8 starting on page 4-318. But I am not as fortunate to know the NTS EIS references for the various "Disposal" sources or Deep Underground Tests on lines 13-22.
2 | 2	v 1, p 4-8, li 1-22	***Problem:*** Table 4-1 is not complete. ***Recommendation:*** Modify Table 4-1 Column 4. Column 4 should at least reflect the elements of all nine major radionuclides: Americium, Cesium, Cobalt, Europium, Plutonium, and Strontium, although McArthur and Mead (RDIP Report #3, 1987) also measured several other radionuclides in the surficial soils.
3 |		
4 | 3	v 1, p 4-106, li 15-16	***Problem:*** Nowhere in McArthur's (1991) report is the inventory at Sedan Crater explicitly estimated as 328 Ci. In fact, in Area 10, the total inventory from the nine major radionuclides is 304 Ci with 12 Ci more found at Sedan from other manmade radionuclides. ***Recommendation:*** Simply remove this sentence since it is not important to the argument or adjust the statement to reflect accurate information.
5 | 4	v 1, p 4-110, li 29-32	***Problem:*** Tritium decay is incorrectly calculated from 18,570 Ci to 1,200 Ci after 5 years.

ORGANIZATION 4 (CONTINUED)

Recommendation: Consider the following correction: tritium has a 12.3-year half-life and would decrease to 75.4 percent of its original amount after 5 years. Thus, 18,530 Ci of tritium decay to 14,000 Ci after 5 years.

5 6 v 1, p 4-110, li 29 to v 1, p 4-111, li 7

Problem: The interpretation of the work by Borg *et al.* (1976) is inappropriate considering the current knowledge of nuclear testing conducted by the United States. The numbers published by Borg *et al.* (1976, p 100-102) which are used in these lines of the NTS EIS are the result (*i.e.*, activation and fission products) of a fission yield except for the tritium component. Although activation of trace lithium in the NTS ground would be the major contributor of tritium from a fission detonation, the authors were aware that a significant amount of tritium would be produced from a thermonuclear device because it is one of the primary fuels in the core. In other words, tritium is no longer the result of trace amounts of lithium in the ground from a fission detonation, but rather, tritium is purposefully produced in mass in the core of a thermonuclear device to provide the fuel for fusion reactions. For this reason, the NTS EIS and Borg *et al.* (1976) are essentially comparing apples and oranges when they simply add a tritium component to a fission yield.

7

Recommendation: When considering the Radiological Source Term, one should be very careful to estimate the fission and fusion contributions separately since the physics involved are very different. The primary purpose of the Borg *et al.* (1976) document was to analyze contaminant migration and I do not believe that their results were intended to be applied to the characterization of a thermonuclear device as the NTS EIS has applied their work. This is best evidenced by quoting from the Borg *et al.* (1976) document and putting to light the rigor of their tritium "calculations."

8

"The amount of tritium deposited below or near the water table at NTS through June 30, 1975, can be crudely estimated. It is about 10 kg at Pahute Mesa and about 3 kg at Yucca Flat. The amount at Frenchman Flat is negligible. These values are for the 78 tests detonated below the water table or with a cavity radius below the water table. These estimates are probably accurate to within a factor of 2 or 3 but should not be construed as a definitive catalog of tritium deposited at NTS." (Borg *et al.*, 1976, p 103)

Therefore, I suggest removing line 27 (p 4-110) through line 7 (p 4-111) in which this rather obfuscated and possibly incorrect treatment of the Radiological Source Term is exemplified, and end

ORGANIZATION 4 (CONTINUED)

the section with the non-contentious statement of the preceding line: "The source term includes numerous isotopes that are both short-lived and long-lived."

9 6 v 1, p 4-111, li 1-7

Problem: The basis of the total underground radioactivity of 300 million curies (including a reference citation) has not been clarified. Thus, it is not clear in this paragraph which considerations are connected to the work of Borg *et al.* (1976): the estimate itself or the uncertainty in the estimate. In either case, the previous comment still applies: the Borg *et al.* (1976) work alone is not appropriate to determine parameters of the total underground radiological source term, especially tritium.

10

11

Recommendation: The basis (*e.g.*, methodology and calculations) of the 300 million curies should be made available to the public and open scientific community for review. This would mean releasing an unclassified version of the reference. I invoke the words of a truly eminent scientist to aid in the argument against classification. The following are excerpts from Better a Shield Than a Sword, by Edward Teller (1987):

"Today, secrecy has become a terrible destructive force in our society. My postwar efforts to reverse the process have not affected its devastating spread. I am unhappy that I had anything to do with its beginnings.

Science thrives on openness. Researchers should, and often must, share their findings.

Security regulations have helped drive a wedge between our universities and our military research and development effort.

Under present rules, research done in our national laboratories cannot be fully shared with civilian industries. When we fail to expose people to problems they could help solve, we remain unaware of the loss. We now have millions of classified technical documents. We also have falling productivity. Rapid progress cannot be reconciled with central control and secrecy. The limitations we impose on ourselves by restricting information are far greater than any advantage others could gain by copying our ideas.

In addition, by tainting science with secrecy, an unfortunate public attitude is perpetuated. Science is nobody's business but the scientists' Today, science and technology are part of the life-support system of the world. Encouraging the development of a scientifically literate public is of primary importance to everyone's well-being.

Secrecy is not compatible with science, but it is even less compatible with democratic procedure. Two hundred years ago James Madison said, "A popular government without popular information, or the means of acquiring it, is but a prologue to a farce or a tragedy, or perhaps both."

ORGANIZATION 4 (CONTINUED)

The term *credibility gap* is a modest description of our monstrous current problem."

12 The credibility of the NTS EIS radiological source term is at issue not only due to the secretive nature of its conception but also considering possible inappropriate use of methodologies in a referenced work (Borg, *et al.*, 1976) that is available to the public.

13 7 v 1, p 4-159, li 13 ***Problem:*** The data in Table 4-27 is not referenced. However, the data is identical to data released by M. Pankratz of Los Alamos National Laboratory in a memo dated June 23, 1995. The methods used to estimate the data refers to a classified report: LA-CP-94-0222, "Total Radionuclide Inventory Associated with Underground Tests Conducted at the Nevada Test Site," 1955 1992 (U), September 26, 1994 (SRD), authors not given.

Recommendation: Please reference the document from which data in Table 4-27 is taken. If it is in fact the one cited above, which I strongly suspect it is, then the numbers are not for 1995, but for Jan. 1, 1994. This would make a 5 percent difference in the tritium level and affect the levels reported in the following sentence (line 15) for inventories since most of the radioactivity is from tritium.

15 8 v 1, p 4-159, li 20-21 ***Problem:*** I do not agree with the statement that "Most investigators have concluded that much of the radioactivity released during an underground detonation remains in the melt glass in the original cavity. . . ." This is not a true statement since 90 percent of the radioactivity listed in Table 4-27 is tritium which most investigators would conclude becomes part of tritiated water and only a small fraction would remain in the melt glass.

Recommendation: Re-write the sentence to exclude tritium as follows: "Most investigators have concluded that radionuclides other than tritium released during an underground detonation predominantly remain in the melt glass in the original cavity. . . ."

16 9 v 1, p 4-162, li 27 ***Problem:*** The Hydrologic Resources Management Program details refer to "DOE (1995)" which does not fit with any of the references in the Reference Section 4.8.

17 ***Recommendation:*** Clarify which DOE (1995) report is being referenced or add the reference if it is actually missing.

18 10 v 1, p 4-164, li 2-23 ***Problem:*** The superscripts in Table 4-28 are incorrect (*e.g.*, "Lazer Dyes" and "Soda Ash") or incomplete.

ORGANIZATION 4 (CONTINUED)

Recommendation: Change superscript of "Soda Ash" from "d" to "c" since Soda Ash contains theophylline, ethylenediamine, and carbonic acid disodium salt. Change the superscript of "Lazer Dyes" from "c" to "b" since Bryant and Fabryka-Martin (1991) note them as part of scene detector packages. Bryant and Fabryka-Martin (1991) note that Thallium is a radiochemical detector and less than 100 grams is typically used, thus, it should have the superscript "**a**" added.

19 11 v 1, p 4-164, li 2-23 ***Problem:*** Bryant and Fabryka-Martin (1991) mention Thallium as a possible Rack and Canister material which is also listed as a Hazardous Material in their Appendix.

Recommendation: Add Thallium to Column 2 of Table 4-28.

20 12 v 1, Ap H, p ES-2, li 4-7 ***Problem:*** This sentence of the Executive Summary claims that the "migration of tritium-contaminated groundwater from test locations within the NTS or at the Project Shoal Area is never expected to result in tritium concentrations at the site boundaries that are detectable using present-day analytical equipment" which does not agree with the content of the NTS EIS.

Project Shoal. In the NTS EIS (v 1, Ap H, p 5-3, li 2-4), it is stated that at "the eastern boundary of the Project Shoal Area, tritium in groundwater is predicted to reach a maximum concentration of about 280 pCi/L in about 206 years." 280 pCi/L is above background levels for tritium and is easily detectable.

Recommendation: Correct the sentence to accurately reflect the contents of the document or re-write this section completely to include the worst case scenarios from DOE publications (see Comment 27, below).

21 13 v 1, Ap H, p ES-2, li 10-15 ***Problem:*** The NTS EIS does not quote the worst case scenarios as reported in their reference (Pohlmann *et al.*, 1995) which considers the uncertainties in key transport parameters.

Recommendation: Re-write this section using values from Pohlmann *et al.* (1995) worst case scenario (see Comment 27, below).

22 14 v 1, Ap H, p 1-1, li 15-18 ***Problem:*** The term "evaluation of the potential environmental impacts associated with the various alternative uses of the NTS" is not qualified to the 10-year time frame of the NTS EIS.

ORGANIZATION 4 (CONTINUED)

Recommendation: Since tritium migration could be a compliance problem after the 10-year time frame (see Comments 28 and 33, below), this statement under the "Purpose" heading of the document should accurately convey the narrow scope of the evaluation. I suggest re-writing this part of the sentence as follows: "evaluation of the potential environmental impacts, over the next 10 years, associated with the various alternative uses of the NTS . . . "

23 | 15 v 1, Ap H, p 1-1, li 15-18

Problem: The NTS EIS does not evaluate all of the various alternative uses of the NTS, *e.g.*, public exposure in released-land scenarios (Alternative 4) which would most likely contain the highest risk scenarios to members of the public.

Recommendation: Re-write the sentence to accurately convey that only the more likely alternatives in which members of the public do not have access to NTS land in the next 10 years are being evaluated as follows: "It is the intent that this EIS serve as a support tool for policy makers and stakeholders by providing an evaluation of the potential environmental impacts, over the next 10 years, associated with the more likely alternative uses of the NTS and its resources that are being considered by the DOE." I feel that this re-write truly captures the intent of the DOE in writing the NTS EIS.

24 | 16 *v 1, Ap H, p 1-1,* li 3-5

Problem: The lead sentence of this section of the document again misses the important nuances mentioned in the preceding two comments.

Recommendation: Re-write the lead sentence as follows: "The purpose of this report is to provide an assessment of the human health and safety impacts, over the next 10 years, associated with program activities performed under the more likely alternatives being considered in the NTS EIS."

25 | 17 v 1, Ap H, p 2-1, li 11-16

Problem: This lead line under "General Risk Assessment Concepts" is incomplete. A general risk assessment has the following components:

SOURCE->TRANSPORT->EXPOSURE->DOSE->RISK

The component of "exposure" is missing from the general concept of risk assessment.

Recommendation: Re-write the lead line to include "exposure."

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"Risk assessment is a multidisciplinary subject requiring the identification of events (scenarios) with the potential for a failure that could lead to an undesirable outcome. A general risk assessment contains the following five components: the prediction of the source contaminants subject to release and their concentrations, the description of environmental transport, the determination of exposure pathways to assault the body, the calculation of internal and external dose, and the extrapolation of this dose to human health effects."

26 | 18 v 1, Ap H, p 2-3

Problem: The purpose of Section 2.1.2.1 entitled "Radioactive Decay and Fission" is not clear. I understand and agree with the importance of explaining radioactive decay. However, mentioning fission with regard to nuclear electric power production is inappropriate for the NTS. In addition, if the goal of this section is to explain nuclear reactions such as fission to the public, then an equally important (if not more important) reaction relevant to Radiological Effects is the fusion reaction.

27 |

28 |

Recommendation: Rename Section 2.1.2.1 "Nuclear Reactions: Radioactive Decay, Fission, and Fusion" and insert the following paragraph at page 2-3, line 22:

"Fusion is the process whereby two light nuclei, *e.g.*, a deuteron and a triton (nuclei of heavy hydrogen isotopes), collide and fuse together to form one heavier nucleus and one lighter nucleus. In the process, mass is lost and converted to energy. This nuclear reaction is the process which actually energizes the sun. The amount of energy released per pound of heavy hydrogen fusion is about four times as much as the amount of energy released per pound of uranium or plutonium fission. The large yield (greater than 100 kilotons) nuclear tests conducted at the NTS are probably based on the fusion reaction. Because tritium (a radioactive isotope) is produced in the core of the device as a fuel for the detonation, there is predicted to be large amounts of tritium left in the cavity of the large yield tests."

29 |

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31 | 19 v 1, Ap H, p 2-14, li 29

Problem: Collective dose is report in units of rem.

Recommendation: Change the two occurrences of "rem" to "person-rem."

32 | 20 v 1, Ap H, p 2-16, li 24 and p 2-17, li 11

Problem: The GeoTrans (1995, a and b) references are not in the Public Reading Facility on Losee Road in N. Las Vegas, NV, as of April 17, 1996. Mary Ellen Giampaoli of the DOE has contended that the references are there. But I had this re-checked by Cynthia

ORGANIZATION 4 (CONTINUED)

Ashley (personal communication, April 17, 1996), the facility librarian, and she has confirmed that the GeoTrans (1995, a and b) references are not at the Public Reading Facility. Latonnya Glass of the DOE Public Affairs Office (personal communication, April 17, 1996) is contacting GeoTrans, Inc. to resolve this problem.

Recommendation: Please provide copies of the GeoTrans (1995, a and b) references to the Harry Reid Center for Environmental Studies at UNLV as well as have them available to the public in the Public Reading Facility.

33 | 21 | v 1, Ap H, p 2-16, li 30-31

Problem: Daniels *et al.* (1993) is cited but does not appear in the References on page 7-1. Daniels *et al.* (1993) did very important work that is applicable to the NTS EIS (see Comment 28, below) and possibly more applicable than GeoTrans (1995a).

Recommendation: Add the Daniels *et al.* (1993) information to the References section on page 7-1.

34 | 22 | v 1, Ap H, p 2-17, li 14-16

Problem: Tritium concentrations are reported in this sentence without citing the source.

Recommendation: Cite the source of the 1×10^4 pCi/L tritium concentration.

35 | 23 | v 1, Ap H, p 2-17, li 14-16

Problem: Tritium concentrations are assumed to be 1×10^4 pCi/l, based on unreferenced measurements (see comment above). However, measured data from the Cambric event (Hoffman, 1977) give a measured tritium concentration of 6.1×10^7 pCi/L at the edge of the cavity. Cambric was a very small 0.75 kTon event. I find it hard to believe that the NTS EIS assumption of 1×10^4 pCi/l. tritium concentration is representative of any NTS underground shot.

Recommendation: Do not assume the tritium concentration at test locations will be 1×10^4 pCi/L since I doubt that it will be scientifically justifiable.

36 | 24 | v 1, Ap H, p 2-17, li 16-17

Problem: Calculated risks to the hypothetical member of the public at the boundary of the NTS are results of modeling which used the disputed (see above comment) 1×10^4 pCi/L tritium concentration.

Recommendation: Refer to Daniels *et al.* (1993) for public risks, see Comment 28, below.

ORGANIZATION 4 (CONTINUED)

37 | 25 | v 1, Ap H, p 4-2, li 26-27

38 |

Problem: To state *a priori* that consumption of tritium-contaminated drinking water does not have impacts within the 10-year time frame of the NTS EIS is precarious, especially in this circumstance. Although later in the document Table 5-1 indicates that the nearest peak tritium concentration occurs at the boundary of the Central Nevada Test Area in 15 years. A look at the reference by Pohlmann *et al.* (1995), who performed the calculations, reveals that their scenario considering the highest uncertainty (*i.e.*, worst case) would occur in only 8 years.

Recommendation: Remove the following sentence from the NTS EIS because it is not factual and requires knowledge of the results of calculations which, in one instance, may not agree with the statement. "Scenario GW1 is a future scenario that does not have impacts within the 10-year time frame of this EIS."

39 | 26 | v 1, Ap H, p 5-1, li 16-17

Problem: Same as above comment regarding assumption of no impact from tritium-contamination in 10-years.

Recommendation: The content of the paragraph will not be lost by removing the following sentence: "These impacts to the public are not expected to occur within the 10-year timeframe addressed in the scope of the NTS EIS."

40 | 27 | v 1, Ap H, p 5-1 to 5-2

Problem: Table 5-1 does not reflect the worst case scenarios in the off-site references (*i.e.*, Shoal (Chapman *et al.*, 1995) and CNTA (Pohlmann *et al.*,1995)) in which high variances and uncertainties are assumed. These values should be used to, at the very least, give the upper range of possibilities or could stand alone as the worst case scenarios.

Recommendation: Replace the off-site values in Table 5-1 with the values in the following table (note: NTS EIS values (in parenthesis) are also given below the recommended changes which are in boldface print):

ORGANIZATION 4 (CONTINUED)

Test Location	Receptor Location	Arrival Time of Peak Conc (year)	Dose (rem)	Radiation LCF	Radiation Detriment
Project Shoal Area	Eastern Boundary	71 (206)	4 (1.6×10^{-5})	2×10^{-2} (8.0×10^{-5})	1×10^{-2} (3.7×10^{-5})
Project Shoal Area	Nearest public well	None Listed (278)	0.08 (2.0×10^{-7})	4×10^{-4} (1.0×10^{-10})	2×10^{-4} (4.6×10^{-10})
Central Nevada Test Area	CNTA Boundary	8 (15)	11 (8.0)	5×10^{-2} (4.0×10^{-5})	2×10^{-2} (1.8×10^{-5})
Central Nevada Test Area	Nearest public well	117 (410)	6×10^{-7} (1.8×10^{-9})	3×10^{-9} (9.0×10^{-12})	1×10^{-9} (4.1×10^{-12})

41 ***Recommendation:*** I also recommend reporting the risk values with only one significant figure to emphasize that order of magnitude is the most reliance that can be placed on their determination.

42 28 v 1, Ap H, p 5-1, li 23-27 ***Problem:*** The migration of tritium-contaminated groundwater from Yucca Flat to Mercury does not even closely approximate the maximum health risks to a public individual from underground testing within the NTS boundaries. Since the reference which contains the calculations is currently not available in the Public Reading Facility (see Comment 20, above), I could not determine the reason other federal reports were neglected such as the LLNL report by Daniels, J. I., editor, *et al*., "Pilot Study Risk Assessment for Selected Problems at the Nevada Test Site," UCRL-LR-113891, Lawrence Livermore National Laboratory, June, 1993, which estimates the dose at the boundary of Area 20 to a member of the public drinking the tritium-contaminated water as 14 rem (not only is this dose nine orders of magnitude different from the NTS EIS values, but it is also above compliance levels). In addition, the dose to the nearest residential community, Oasis Valley, had a dose of 0.008 rem. This value is still five orders of magnitude higher than the NTS EIS dose at Mercury although probably within safe standards.

Recommendation: Use federally sponsored studies containing worst case scenarios of tritium-contamination to members of the public. These scenarios (*e.g.*, Pahute Mesa to Oasis Valley) are probably not those analyzing migration from Yucca Flat to the boundary near Mercury, NV, as given in the NTS EIS.

ORGANIZATION 4 (CONTINUED)

43 29 v 1, Ap H, p 5-1, li 25-29 ***Problem:*** The EPA's Clean Drinking Water Act sets the level of tritium in "clean" water at 20,000 pCi/L. In addition, tritium exists in the NTS groundwater due to natural causes at levels which are easily detectable (on the order of 10s of pCi/L). Thus, to give risk numbers for a clearly *de minimus* tritium concentration (the value is actually never given in the NTS EIS but is inferred to be less than 1 pCi/L) leads to insignificant risks such as 1.5×10^{-15}. This risk value assumes a Linear, No-Threshold Dose-Response Curve which is not uniformly accepted in the scientific community. For example, since insufficient epidemiological data exists to say anything about health risk at doses below 5 rem/yr or lifetime dose below 10 rem, some subscribe to a threshold limit. Currently, a range of risks which include the likely possibility of zero adverse health effects is proposed by the Health Physics Society.

44 ***Recommendation:*** If the Yucca Flats to Mercury scenario is chosen to estimate risk to members of the public, it could be dismissed as below some screening level, even if that screening level is 0.0001 of the EPA's "clean" water standard.

45 30 v 1, Ap H, p 5-3, li 3-8 ***Problem:*** A tritium concentration of 280 pCi/L is still below the screening level I propose.

Recommendation: If such a low concentration is to be considered, it should at least give a range for risk which includes the likely possibility of zero adverse health effects.

46 31 v 1, Ap H, p 5-3, li 8-12 ***Problem:*** The NTS EIS is again considering tritium concentrations below 1 pCi/L.

Recommendation: Same as Comment 29, above.

47 32 v 1, Ap H, p 5-3, li 17-22 ***Problem:*** The NTS EIS is again considering tritium concentrations below 1 pCi/L.

Recommendation: Same as Comment 29, above.

48 33 v 1, Ap H, p 5-3, li 29-31 ***Problem:*** Radioactive decay should be properly considered to give the calculation scientific validity. This is important because the tritium concentration (120 million pCi/L) in this case is significant and well above compliance standards even when decay is considered.

ORGANIZATION 4 (CONTINUED)

Recommendation: Adjust the concentration and risk values to include radioactive decay.

49 | 34 | v 1, Ap H, p 5-4, li 31-33

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

50 |

Recommendation: Age effects and nuances in calculating committed dose should justify looking at the workers' lifetime dose, not just a 10-year block. Consider radiation exposure over the entire work period of the population (as the 50-years for the Maximum Reasonably Foreseeable Accident scenario in the NTS EIS, volume 1, appendix H, page 5-8, line 7), not simply over the 10-year scope of the NTS EIS.

51 | 35 | v 1, Ap H, p 5-5, li 15-17

Problem: The worker population radiation dose is considered over 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

52 | 36 | v 1, Ap H, p 5-5, li 29-31

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

53 | 37 | v 1, Ap H, p 5-6, li 28-30

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

38 | v 1, Ap H, p 5-8, li 6

Problem: A total lifetime dose of 281 rem is large and within the scope of the acute 10 rem on which the National Research Council's BEIR V (1990) and the International Commission on Radiological Protection (1991) base the risk slope factor used in the NTS EIS. I believe the Dose-rate effectiveness factors for radiation at low dose rates (Φ_l and Φ_d on page B-3) were inappropriately invoked in these instances.

54 |

Recommendation: Check the calculations and do not use the Dose-rate effectiveness factors for radiation at low dose rates which effectively increases the risks by a factor of 2.

ORGANIZATION 4 (CONTINUED)

55 | 39 | v 1, Ap H, p 6-1, li 21-22

Problem: The concept of probability is misstated. A probability of 1.0 means that it will definitely happen. A probability of 0.5 means that there is a 50-50 chance of occurrence. A probability between 0.5 and 1.0 I would consider "likely." It is not true to infer that a probability of less than 1.0 is "unlikely."

Recommendation: Remove the concept of probability by deleting the following sentence: "In other words, for each NTS EIS alternative, the probability that a single radiation-induced or chemical-induced health effect will occur in the worker population is less than 1.0." And simply state that "it is unlikely that any workers will contract fatal cancer or other detrimental health effects as a result of exposure to radiation. . . ."

56 | 40 | v 1, Ap H, p 6-1, li 30-32

Problem: The statement that "subsurface migration of tritium in groundwater is not expected to result in measurable tritium concentrations at existing public wells at any time in the future," was contested in Comments 12 and 28, above.

Recommendation: Resolve the issue which may mean changing the conclusion in this statement.

57 | 41 | v 1, Ap H, p B-3, li 14-15

Problem: I believe the Dose-rate effectiveness factor for radiation latent cancer fatality at low dose rates is incorrectly quoted as 2.5. ICRP (1991, p 112) "has decided to recommend that for radiation protection purposes the value 2 be used for the DDREF" (Dose and Dose Rate Effectiveness Factor for low LET radiation). The factor of 2 is also found in the Federal Register (page 23363, 1991).

Recommendation: I believe the incorrect factor was never actually used is calculations, but this should be double-checked as well as the factor for radiation detriment (Φ_d) which I could not find in ICRP (1991).

58 | 42 | v 1, Ap H, p C-21, li 1-11

Problem: Table C-34 reports insignificant and meaningless values. The public has no comprehension for these values and the doses for such risk are well under safe limits.

59 |

Recommendation: Place values for concentration and dose next to safe and EPA clean standards to give the public an intuitive feel for the insignificance of these risks.

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Apr-10-96 03:33P DP34 NEPA Office G Palmer 202 586 0282

Department of Energy
Washington, DC 20585

APR 10 1996

Mr. W. B. Andrews
Harry Reid Center for Environmental Studies
4505 Maryland Parkway
Box 454009
Las Vegas, Nevada 89154-4009

Dear Mr. Andrews:

When you met with Acting Under Secretary Grumbly and me on April 3, 1996, you discussed an issue with regard to the Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) and Off-site Locations in the State of Nevada, which is being prepared by the Office of Defense Programs (DP) with the cooperation of several other Department of Energy (DOE) offices. Because DP is the lead office for the EIS, I told Mr. Grumbly that I would respond to your comments regarding the calculation of the soil burden of radiation that resulted from the underground nuclear tests conducted at the Nevada Test Site.

You commented that Mr. Anthony Hechanova had not been able to get enough information from the DOE to confirm the results of work on a doctoral thesis. We contacted personnel of the Nevada Operations Office, but have not been able to verify who has been contacted by Mr. Hechanova.

With regard to an evaluation of the calculations by DOE, we have not conducted an evaluation, as no one we contacted at the Nevada Operations Office has seen the model which led to the calculations nor the calculated results.

DOE's current analysis regarding the radiologic inventory is in the draft EIS, which has been with the public since February 2, 1996. Specific references of interest to you would be: pages 4-3 thru 4-9, paragraph 4.1.1, Land Use; pages 4-100 thru 4-111, para. 4.1.4.2, Geology; and pages 4-159 thru 4-163, RADIOLOGIC SOURCES IN GROUNDWATER.

I am aware of your organization's work with studies for the transportation of low level waste for the EIS. We would like to pursue the issues you raised to ensure that the EIS is as accurate as possible. We are reviewing and incorporating comments and questions from the public until May 3, 1996, but to date we have no

ORGANIZATION 4 (CONTINUED)

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record of having received comments from you or Mr. Hechanova. Please contact Dr. Donald R. Elle, the Program Manager for the NTS EIS, at 702-295-5844 to further discuss the issues you raised.

Sincerely,

David B. Leclaire
Deputy Assistant Secretary
for Program Support
Defense Programs

cc: T. Grumbly, US
Mary Manning, Las Vegas Sun

ORGANIZATION 5

COMMUNITY ADVISORY BOARD (CAB)

FOR

NEVADA TEST SITE (NTS) PROGRAMS

COMMENT DOCUMENT

FOR THE

NTS DRAFT ENVIRONMENTAL IMPACT STATEMENT

COMMUNITY ADVISORY BOARD

May 1, 1996

Dr. Donald Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, Nevada 89114

Subject: **NEVADA TEST SITE COMMUNITY ADVISORY BOARD (CAB) COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE NEVADA TEST SITE (NTS), AND OFF-SITE LOCATIONS IN THE STATE OF NEVADA**

Dear Dr. Elle:

The Community Advisory Board (CAB) for Nevada Test Site Programs was organized to provide input to the Department of Energy (DOE) on issues of importance to those communities and public potentially affected by present and future activities at the NTS and related areas in Nevada. Although the CAB has been tasked with providing input to a number of key DOE documents and processes, perhaps our most significant task to date has been the review and analysis of the ***Draft Environmental Impact Statement (EIS) for the Nevada Test Site (NTS), and Off-Site Locations in the State of Nevada.***

The CAB, therefore, considers the review of the NTS EIS as one of its more important responsibilities. The future role of the NTS and off-sites, discussed in the EIS, are of considerable importance to Nevadans, particularly those in the southern part of the state.

Although CAB members were selected to provide a representative range of citizen viewpoints to the DOE's activities at the NTS, members recognize that we cannot speak for the entire community. To further broaden our understanding of the public's issues on this program, therefore, many CAB participants actively solicited input from other citizen groups or individuals. While we're hopeful that these interactions with others enhance our understanding of community concerns, DOE must also consider carefully other citizen viewpoints.

In addition to our comments, we have also included a discussion of the process that the CAB employed in the review of the document. We're hopeful that this may be of benefit to other Site Specific Advisory Boards and review groups that are participating in similar review activities.

1500 EAST FLAMINGO, SUITE 367 LAS VEGAS, NEVADA 89119

(Chair) Dale Schutte, (Members) Richard Arnold, Donna Bethel, Chris Brown, Diane Curtain, Marilynn Hill, James Hinderman, Stephanie Latham, Lelia McDaniels, Rafael Nevills, Mary O'Brien, Paul Rafati, Stanley Sims, Connie Skolnik, Jeanne Stefchik, Bill Vincent, (Ex Officio) Joe Fretz, Gary Sellers, Fred Wagoner

Dr. Donald Elle
May 1, 1996
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Official review comments were not provided by CAB for two volumes of the EIS. The CAB, for example, relied on comments from Native American groups for Appendix G of the EIS (American Indian Comments for the Nevada Test Site Environmental Impact Statement). Mr. Richard Arnold, CAB member, coordinated the development of the Native American comments found in Appendix G of the EIS.

Likewise, the CAB did not review Appendix H (Human Health and Safety Impacts Study). In Appendix A, the CAB has attached comments from representatives of the Nevada Risk Assessment Management Program (NRAMP). NRAMP members have also submitted these comments independently.

The CAB members are optimistic that DOE will consider carefully the comments, conclusions and recommendations of the CAB. We are concerned, however, that the relatively brief time available between the release of the *Final* EIS, and the publication of the *Record of Decision (ROD)* will not provide sufficient time for DOE to adequately consider and resolve a number of substantive issues. The final ROD should reaffirm a commitment by DOE to continue to work with interested parties until these issues and any others are resolved.

The Community Advisory Board for the Nevada Test Site Programs has appreciated the many interactions that we've had with DOE staff on this extremely important document. The staff that we've dealt with have demonstrated a strong commitment to understand and resolve community concerns. They are to be commended. We look forward to further exchanges in the future.

We look forward to the timely written response to our comments.

Sincerely,

Dale Schutte

Dale Schutte, Chairperson
Community Advisory Board for
Nevada Test Site Programs

Attachment

cc: CAB Members
Ex officio Members
Earle Dixon, UNLV/HRC
Kevin Rohrer, DOE/AMEM
Administrative record

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THE COMMUNITY ADVISORY BOARD FOR NEVADA TEST SITE PROGRAMS ENVIRONMENTAL IMPACT STATEMENT REVIEW PROCESS

Background

The CAB has recognized that the review of the Nevada Test Site (NTS) Environmental Impact Statement (EIS) is one of our most important tasks. The review of an EIS within a public comment period, usually 90 days, however, can be a formidable task.

With voluntary groups such as the Community Advisory Board (CAB) for Nevada Test Site Programs, the review process becomes even more difficult. Besides the rather substantial time required to review a document of this size and complexity, the approval of a final, official statement from the CAB must also clear a number of procedural hurdles. For example, final approval must occur at a noticed meeting with, appropriately, the opportunity for comment by individuals and organizations. To ensure that all CAB members, and others, have the ability to provide informed input to the EIS it also requires the preparation of a draft response document in advance of the final review meeting.

To meet these demands a process was developed, described in subsequent sections, to facilitate a relatively comprehensive review of the EIS.

Definition of Key Program Topics

It was apparent that, because of the size of the EIS document, and the amount of time available for the review of the document, comments from the CAB would, as much as possible, be limited to major issues. Members, however, were encouraged to provide as much detailed comment as possible.

To assist in structuring the review process, key program areas within the NTS EIS were identified, assigned, and reviewed for specific comment. These were determined to be:

1. The four Alternatives presented (*No Action, Expanded Use,* etc.)
2. The five elements evaluated within each alternative *(Defense programs, waste management, environmental restoration, non-defense R & D, work for others)*
3. Other topics covered under separate EIS documents (Native Americans, Health and Safety, Transportation, and Resource Management were included as part of the EIS review).

The Review Process

The process developed was as follows:

1) The EIS Subcommittee, which was organized to evaluate other Environmental Assessments (EA), and EIS's, distributed the workload.

   A. Subcommittees, usually comprising three or four members, were organized to review each of the Alternatives presented in the EIS.
   B. Others reviewed each of the independent documents.
      1. The CAB's Transportation Subcommittee reviewed the *Transportation Study*.
      2. Native American groups evaluated the adequacy of the American Indian document.
      3. A companion study group examined the Health and Safety study.
      4. The EIS subcommittee reviewed the *Framework for Resource Management*.
   C. A common format was developed for the review of the Alternatives.
      1. A matrix was formulated to organize the response of the group.
      2. A comment matrix format was developed so that specific comments could be listed to facilitate review by DOE.

2) The review was completed by the individual groups and synthesized by the EIS Subcommittee.
   A. Several Board members took the initiative of obtaining comments from other citizens or citizen groups.
   B. Opportunity for public input was provided at CAB monthly meetings, and at other DOE public EIS meetings held in several locations in Nevada and one in Utah.

3) Several other CAB committee meetings were held to further refine the final review.

4) The CAB officially approved the document at its May 1, 1996 monthly meeting prior to the end of the Draft NTS EIS comment period (May 3, 1996).

Lessons Learned

In performing the review a number of lessons were learned that can guide the CAB's future actions in evaluating documents. These may be of use to other groups conducting similar reviews. The comments could possibly provide some insight to the DOE in assisting communities in their review efforts.

1) Because of the relatively brief period for public comment, it is important that all available resources be employed, and innovative solutions be considered. This will require assistance from the local DOE office.

2) The DOE should release draft review documents as early as possible. The ability to review the proposed *Transportation Study*, was especially useful for the NTS CAB. In addition to providing more review time, it also provides a greater opportunity for interaction with the DOE staff.

3) A CAB should take advantage of the expertise of other organizations. "Networking" the review with other committees and advisory groups can assist in building the committee's knowledge on issues, as well as ensure substantive review by "experts" on individual topics.

4) Informal meetings should be held with the DOE staff who produce specific studies. The DOE should provide a list of these individuals and make them available upon request. In addition to the potential for a better comprehension of a topical area, informal meetings also provide an early opportunity for the DOE to gain a direct awareness of a citizen or community's viewpoint.

5) The judgements and other assumptions underlying some of the decisions offered should be questioned if necessary. While this seems fairly self-evident the public is often intimidated by "experts." Make sure the experts clearly explain their information and reasons. The intent of an EIS is to develop a document that will provide the average citizen with understable information about issues, which can be used to develop recommendations for choices of action on those issues. With respect to the DOE in preparing a technical review for incorporation in a EIS, try to reflect on whether the information presented will be understandble to the average citizen.

6) Do not assume that all of the issues need to be resolved in the EIS. While it is important that substantive issues be defined during the comment period, the EIS is the first step in toward the resolution of many key issues. The Record of Decision should note those issues requiring further work.

7) Utilize as many of an advisory board's members as possible. Organize board members to review smaller sections of the single large document and then consolidate sections into one collective review document.

8) Complete the review within the allotted time frame. While the federal government often grants extension of time to allow for additional input into NEPA documents, they are generally not required to do so. Complete the review within the allotted time span.

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE ONE: CONTINUE CURRENT OPERATIONS

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
1	1	pg 3-2, line 26-27	If DOE/NV activities are to continue in the same manner & degree as they have in the past 3-5 years, how will the underground testing program take into consideration & operate with respect to current world political conditions ?
2	2	pg 3-3, line 20-22	If under the second scenario the President directs DOE to conduct underground testing, what is the minimum amount of weapons grade plutonium that needs to be stored at the NTS to adequately conduct testing operations ?
3	3	pg 3-3, line 20-22	If under the second scenario the President directs DOE to conduct underground testing, what is the criteria for determining whether the device is to be detonated at or below the regional static water table elevation ?
4	4	pg 3-3, line 20-22	Should underground testing of a nuclear device at or below the regional static water table elevation be required under the second scenario, how does DOE plan to minimize the possible contamination of the regional aquifer ?
5	5	pg 3-4, line 9-10	If special tests or experiments with special nuclear materials are to be done, is the Tonopah Test Range a candidate for this type of testing, and how will stakeholders be informed & included in the planning to minimize risk ?
6	6	pg 3-3, line 19	Does the destruction of damaged nuclear weapons mean that the weapon will be destroyed by detonation ?
7	7	pg 2-9 thru 2-11	The Greater Confinement Disposal (GCD) program described under the Waste Management program has not been presented to the CAB. When will the CAB receive a presentation on the GCD program?
8	8	pg 2-10, line 11-16	In 1981 DOE adopted the concept of greater confinement burial of high specific activity-low level waste. What document describes the analysis & adoption of this concept, and can the CAB get a copy of this document ?
9	9	pg 2-11, line 11-12	There are 13 greater confinement boreholes already located in Area 5 RWMS, and approximately 1,000 more of these boreholes are needed to dispose of greater than Class C waste in the complex. Is this true and explain ?
10	10	pg 2-10, line 11-16	If NRC requires that Greater-than-Class-C waste be disposed of in a deep geological repository unless disposal elsewhere is approved, shouldn't the proposed Yucca Mtn repository be the place to dispose of this waste type?
11	11	pg 2-10, line 21-23	The definition of greater-than-class C low-level waste for the DOE means it was not commercially generated. When will the DOE educate stakeholders as to the different classes & hazards (ABCs) of low-level waste ?
12	12	pg 2-12, line 22-25	The prioritization of ER activities will gather & consider factors in Table 2-1. How does the DOE plan to demonstrate & convince stakeholders that their concerns will be included & influence the ER prioritization process?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 1: page 1

ORGANIZATION 5 (CONTINUED)

ALTERNATIVE ONE COMMENTS

COMMUNITY ADVISORY BOARD CAB NEVADA TEST SITE PROGRAMS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5/17/96

NTS Community Advisory Board Draft NTS EIS Comments -- ALTERNATIVE ONE: CONTINUE CURRENT OPERATIONS

ORGANIZATION 5 (CONTINUED)

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
13	13	pg 3-5, line 13-19	DNA ER activities are funded separately from the DOE/NV ER program. What is the funding status of DNA ER activities & what is their schedule for prioritization and cleanup over the 10 year time frame of the NTS EIS ?
14	14	pg 3-22, line 1-2	Is the Area 5 RWMS performance assessment report still on schedule for publication by July 1996 or earlier ? Will the CAB be given a presentation & a copy of the report ?
15	15	pg 3-22, line 16-17	The performance assessment of Area 3 RWMS is ongoing & scheduled for a draft report in September 1997. Will the CAB be given a presentation & a copy of the draft report ?
16	16	pg 3-8, Fig. 3-1	What is the difference between the NTS Boundary Line & the NTS Area Boundary Line ?
17	17	pg 3-8, Fig. 3-1	What is the origin & justification for designating parts or all of the NTS as "Reserved Zone" ?
18	18	pg 5-1, Table 5-3	How does the DOE conclude that environmental impacts under Alternative 1 would be minimal ? Please define minimal land use impact, especially if storage & disposal operations continue ?
19	19	pg 5-32, Table 5-3	Do the approximated volumes of low-level & mixed-waste waste volumes represent the volume of waste to be disposed of at the NTS ? How many shipments of waste does the approximated volumes equal ?
20	20	pg 5-32, Table 5-3	Approximated waste volumes given under Alternative 1 appear to conflict with waste volumes cited elsewhere in the NTS EIS document. Could the summary data be checked for agreement with data cited elsewhere in the text ?
21	21	pg 3-4, line 14-17	Does the description under 3.1.1.2 Waste Management Program mean that DOE ER activities nationwide will continue to generate increasing volumes of waste destined for management and disposal at the NTS ?
22	22	pg 3-40, Table 3-5	Alternative 1: what is meant by, " Because of the location of the sites analyzed, and because similar land uses generally would be located on the borders of the sites, surrounding land uses would not be affected by this alternative " ?
23	23	pg 3-42, Table 3-5	Alternative 1: How does the employment at the NTS relate to the unemployment, personal income, population in 2005, and housing demand in southern Nevada ?
24	24	pg 3-43, Table 3-5	Alternative 1: Please explain how total effects from continuing groundwater withdrawals are expected to be minor. Is it possible to extract more water than the Yucca Flat Basin can yield & what would be the impact ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 1: page 2

NTS Community Advisory Board Draft NTS EIS Comments -- ALTERNATIVE ONE: CONTINUE CURRENT OPERATIONS

ORGANIZATION 5 (CONTINUED)

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
25	25	pg 3-43, Table 3-5	Alternative 1: What is the environmental impact from a large surface flow event (25, 50, or 100 year flood) at one of the Radioactive Waste Management Sites & how will this impact be mitigated ?
26	26	pg 3-44, Table 3-5	Alternative 1: What is meant by, "...and the region would continue its present attainment designation for all criteria pollutants." ? What about additions to areas in the Las Vegas Valley that have reached non-attainment ?
27	27	pg 3-45, Table 3-5	Alternative 1: Are the environmental impacts to American Indian cultural resources significant or not , and why ? Is Table 3-5 designed to give the reader a view point that cultural resources impacts are not significant ?
28	28	pg 3-45, Table 3-46	Alternative 1: Are the probabilities given for health effects from exposure to irritated groundwater & an explosion at the Device Assembly Facility real ? Where are these probability delineations explained in the text of the EIS ?
29	29	pg 5-10, Table 5.1-2	Do the average daily traffic (ADT) values noted include vehicles transporting nuclear waste ?
30	30	pg 5-17, Table 5.1-5	Please explain the discrepancy between the number of generator shipments from the 13 sites in the table with the number of inbound shipments from off-site generators for the next 10 years (6,501) on page 5-12, line 14 ?
31	31	pg 5-39 , lins 25-26	Is there off-site monitoring down gradient in the watershed from where the Area 5 RWMS is located (Muddy River area) ?
32	32	pg 5-40, line 21	Where would the 50,000 cubic meters of mixed waste from the 100 DNA sites be stored and disposed ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 1: page 3

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE TWO: DISCONTINUE CURRENT OPERATIONS

	CAB comm act #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
33	1	A-29, line 29-30	What is the projected volume of greater than Class C waste that the DIS mandons here ?
34	2	A-29, line 29-30	With reference to the volume of greater than Class C waste mentioned above, where is the location & source of this waste ?

4/8/96 summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 2: page 1

ORGANIZATION 5 (CONTINUED)

ALTERNATIVE TWO COMMENTS

COMMUNITY ADVISORY BOARD CAB NEVADA TEST SITE PROGRAMS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 4/1/96

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments -- ALTERNATIVE THREE: EXPANDED USE

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
35	1	pg 3-16, line 5-7	Why are Colorado Valley, Dry Lake Valley, and Coyote Spring Valley included for evaluation of an expanded Solar Enterprise Zone and part of the NTS EIS ?
36	2	pg 3-45, Table 3-5	Alternative 3: With respect to cultural resources, will Native Americans continue to be involved with survey of sites & monitoring to protect sites from degradation and vandalism, especially when areas are to be disturbed for construction or testing?
37	3	pg S-8, Table S-1	It is very difficult for the reader to compare the 5 major program activities with respect to land use without an estimate of the land area impacted under each activity. Why not give the reader a summary of land use areas in units of the English system ?
38	4	pg S-34, Table S-3	Why does Alternative 3 biological resources impact description not provide the complete impact to natural habitat from the four technologies proposed for the Solar Enterprise Zone ? Please provide brief past for each technology.
39	5	pg S-34, Table S-3	What will be the impact to groundwater resources at & down gradient of the NTS if the Solar Enterprise Zone where to be located at the NTS & withdrew 5,550 acre-feet of groundwater ? Will contaminants from underground testing start to move ?
40	6	pg S-34, Table S-3	How will the impacts from ER activities on biological resources be mitigated when most of the additional 3,000 acres could be desert tortise habitat ?
41	7	pg S-34, Table S-3	How many acres of natural habitat would be disturbed or lost for each type of proposed technology for the Solar Enterprise Zone ?
42	8	pg S-31, Table S-3	Why can't airspace over parts of the NTS and Nellis Range Complex be partially deleted so that private & commercial flights can fly shorter, safer routes between destinations ?
43	9	pg S-33, Table S-3	Why hasn't a Soil Conservation Service survey been done at the NTS to determine which soils & locations can sensibly handle increased traffic and disturbances ?
44	10	pg S-35, Table S-3	Why is the government securing all the visual or viewsheds to lockup the mountain logs to the exclusion of other current & potential future uses in the area northeast of the NTS ?
45	11	pg S-34, Table S-3	If the Solar Enterprise Zone where to be located at the NTS & withdrew 5,550 acre-feet of groundwater, will contaminants from underground testing start to move, to what extent, and in what time frame ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 3: page 1

ORGANIZATION 5 (CONTINUED)

ALTERNATIVE THREE COMMENTS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5/1/96

ORGANIZATION 5 (CONTINUED)

ALTERNATIVE FOUR COMMENTS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5-1196

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE THREE: EXPANDED USE

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
46	12	Figure 3-4	1) Alternative 3 were to be implemented, what is there to prevent the return to the public of lands in area 18, 29, & 30 as shown in Figure 3-4 & cited under Alternative 4 ?
47	13		What are the limiting factors for land uses at the NTS created by groundwater consumption at the site ?
48	14		The possibility of future uses of the NTS holds promise for economic development, however, stakeholders are concerned about activities that would introduce new contamination, impact resources, & further degrade the
			environment. In terms of the actual process of cleaning up NTS land for potential turn back to the public for alternative use, what would be the steps to take NTS lands from a defense activity status to an industrial zone status
			and could these steps be illustrated with some type of flow chart so that stakeholders understand the process & bureaucracy of trying to cleanup & return lands to the public for an alternative use ?

4/9/96 summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 3: page 2

NTS Community Advisory Board Draft NTS EIS Comments -- ALTERNATIVE FOUR: ALTERNATE USE OF WITHDRAWN LANDS

ORGANIZATION 5 (CONTINUED)

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
49	1		What is the estimated size of the land to be set aside for the Solar Enterprise Zone ?
50	2		What is the level of existing contamination and subsequent remediation that would have to be performed in order to establish a Solar Enterprise Zone ?
51	3		What type of technology will be used to clean up the land for the Solar Enterprise Zone ?
52	4		To what health risk standard will the land proposed for the Solar Enterprise Zone have to be cleaned up to ?
53	5		What is the estimated cost and time frame for the clean-up, turn back of lands, and construction of a Solar Enterprise Zone ?
54	6		What would be an estimated operating cost for a Solar Enterprise Zone at the NTS ?
55	7		Under the Work for Others Program, how busy would the airspace over the NTS become and what type of aircraft would be flying over the NTS airspace ?
56	8		Would commercial and general aircraft be able to utilize the NTS airspace under the Work for Others Program at the NTS ?
57	9	pg 5-219, line 5	What is the difference between commercial aviation use and general aviation use ?
58	10		What is the current technology being used at the NTS to monitor/control aircraft flights to the site ?
59	11		What upgrades will be necessary to the existing NTS airfield in order to handle enhanced utilization of the facility under the Work for Others Program ? Will more staff also be needed to support more aircraft traffic ?
60	12		What is the estimated operating cost necessary to monitor/control increased air traffic at the NTS airfield ?
61	13		What types of containment casks and vehicle types will be utilized to transport Transuranic/Mixed Transuranic Waste to the WIPP facility in New Mexico ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 4, page 1

NTS Community Advisory Board Draft NTS EIS Comments -- ALTERNATIVE FOUR: ALTERNATE USE OF WITHDRAWN LANDS

ORGANIZATION 5 (CONTINUED)

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
62	14		What types of containment devices and vehicles will be utilized to transport Low-Level Liquid Waste from their source of generation to a liquid waste treatment facility
63	15		In the ER program for Nevada, what types of shipping containers and vehicles will be used to transport contaminated soil and materials to the NTS for disposal ?
64	16		Under the Nondefense Research & Development Program & Work for Others Program, please identify the infrastructure upgrade that will be necessary in order to handle the influx of daily trips to and within the NTS ?
65	17		What will be the cost to upgrade the NTS infrastructure in order to handle increased traffic from the Nondefense Research & Development Program & Work for Others Program ?
66	18		Under the Defense Programs & Work for Others Program, employment loses would occur at the NTS. How does the DOE plan to assist displaced workers directly and indirectly affected by these programs ?
67	19		Under the ER Program affecting geology & soils, what is the time table for cleaning up sites, the area of the sites, & what will be the clean-up level for the sites ?
68	20		Under the Waste Management Program, what are the safety features designed into the RWMS & when will the Performance Assessment report be completed & copied to the CAB ?
69	21		Under the Waste Management Program, what are DOE's future plans for the safe disposal & final disposition of high explosives in Area 11 ? Are any other areas at the NTS slated for high explosives disposal ?
70	22		After an area is cleaned-up under the ER Program, what is the estimated time for natural plant communities to reestablish themselves at the remediated sites ?
71	23		Under the Nondefense Research & Development Program, how does DOE plan to minimize destruction of the environment around & beneath the proposed Solar Enterprise Zone ?
72	24		Under Alternative 4 activities, will there be any impact to the air quality in & around the NTS ?
73	25		Under Alternative 4 activities, what will be the off-site noise level impacts based on the increase of NTS activities ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

ALTERNATIVE 4, page 2

ORGANIZATION 5 (CONTINUED)

GENERAL COMMENTS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS 5/1/96.

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE FOUR: ALTERNATE USE OF WITHDRAWN LANDS

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
74	26		Under the Nondefense Research & Development Program, what are DOE's plan for managing the Solar Enterprise Zone if the zone is located off the NTS at Eldorado Valley, Dry Lake, or Coyote Springs ?
75	27		Will DOE assume all liabilities that would negatively affect the surrounding property values, due to visible obstruction of views & eyesores to the landscapes if the Solar Enterprise Zone is located off of the NTS ?

4/8/96. summarized by ECOtron, CAB Technical Advisor

ALTERNATIVE 4. page 3

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments --GENERAL COMMENTS

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
76	1		Please explain why there is a lack of inter-relationship between the EIS for regular programs and the Yucca Mountain, and Nellis Range Complex projects ?
77	2		Why doesn't the EIS consider or discuss the cumulative impacts of all types of NTS wastes and cleanups?
78	3		How will DOE set priorities on how to manage the NTS with relation to plant and animal population already existing at the NTS?
79	4		What are DOE's priorities in dealing with the NTS?
80	5		Why does the EIS say only NTS in Nye County? Maps in the NTS EIS clearly show Area 19 half in Lincoln County and Area 51, and its "view sheds" in Lincoln County?
81	6		Why isn't the topic of natural resources, in relation to economic, recreational, or social benefits broached?
82	7		How does the DOE consider the goals of the RMP should be established to reach appropriate scales?
83	8		Does the DOE agree that monitoring by stakeholders as a crucial step to predict impacts and find suitable land uses?
84	9	pgs -4-3, sec. 4.2	Why doesn't the DOE provide maps of the facility and other infrastructure features during the comment period? These maps should be available during the comment period, not after
85	10	sec. 4.5, pgs 4-5	How are future water needs planned for at the NTS?
86	11		Why did the DOE place the "Reader's Guide" in the back of the summary booklet? Doesn't the DOE want people to be able to find what they are interested in quickly?
87	12		When will the DOE decide on a preferred alternative? Will this be a part of the final EIS? Will the public have an opportunity to collaborate on the final EIS with the PA?
88	13		Why is the NTS EIS only investigating a 10 year period?

4/9/96: summarized by ECDixon, CAB Technical Advisor

GENERAL: page 1

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments --GENERAL COMMENTS

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
89	14		Why wasn't there much of an analysis of the Tonopah Test Range, Project Shoal Area, and the Central Nevada Test Area?
90	15	pgs 4-9	Did the DOE note that the Nevada Legislature approved the withdrawl of the land for these purposes?
91	16		Why is the engineering notation too common throughout the report?
92	17	pg 4-61	Since the estimated shipment amounts are available in the Transportation Study, why aren't they included to make it more understable to the public?
93	18	pgs 4-128, fig. 4-31	Does this indicate that there is contamination off-site? Why aren't the reference points with respect to the Tonopah Test Range clear?
94	19	pg 3-29	Why are Yucca Mountain construction, operation, and closure beyond the scope of the EIS?
95	20	pgs 3-29	If the MRS expires now would the DOE handle na ricerim Storage Facility, as is being proposed by Congress? How would the EIS handle contingencies?
96	21	pgs 3-36	Has the extent of the contamination been mapped? In the fourth paragraph it states "no measurable tritium resulting from the nuclear testing in the area under the control of the USAF or DOE ", what is measurable?
97	22	pgs 3-37	Has the migration of pollutants from Area 3 waste emplaced in subsidence craters been monitored?
98	23	pgs 3-38	Area is adjacent to Clark County and water supplies for Moapa Paiutes and others. Have potential off-site impacts to these areas been taken into consideration?
99	24	pg 4-4	Is this baseline, complete, or was there sole reliance on the 1977 EIS?
100	25	pgs 4-43	361,800 m3 of waste is noted in Area 3, what is the breakdown of the waste?
101	26		Long term monitoring and security is mentioned often, but why is there no mention of a funding mechanism to pay for this long term monitoring program. ?

4/9/96: summarized by ECDixon, CAB Technical Advisor

GENERAL: page 2

ORGANIZATION 5 (CONTINUED)

RESOURCE MANAGEMENT PLAN COMMENTS

COMMUNITY ADVISORY BOARD
CAB
NEVADA TEST SITE PROGRAMS

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5/1/98

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments –GENERAL COMMENTS

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
102	27		Funding is generally year to year and subject to change at the whim of congress. So why can't the government set up an endowment fund (from generator fees or other sources) to ensure that the requirement for long term monitoring and security is met ?
103	28		There is no mention in the NTS EIS, but is colloid movement of radioactivity in water and soils a possible problem in the future ? And how will this type of transport mechanism be mitigated ?
104	29	S-26, line 30-33 & S-27, line 1-9	Has H3 tritium already been detected outside the northwest NTS boundary corner of NTS (Pahute Mesa)? Mr. Doug Duncan stated such at the NTS Community Advisory Board July 1995 meeting ? Please explain.
105	30		Why does the DOE exclude the Yucca Mountain EIS impacts from the NTS EIS ? Shouldn't there be an integrated approach to evaluating all potential impacts from all potential sources in all DOE programs ?
106	31		The comments of the Nevada Risk Assessment Management Program (NRAMP) to the NTS EIS have raised concerns among stakeholders about technical inaccuracies cited in the EIS document. Technical accuracy
			is extremely important in a NEPA type document since it will be relied upon to make policy & program decisions. How will the DOE support their Record of Decision about NTS activities if technical inaccuracies are determined to be significant ?

4/9/98 summarized by ECDixon, CAB Technical Advisor

GENERAL page 3

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments -- RESOURCE MANAGEMENT PLAN

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
107	1		What is the DOE doing to restill trust in the public ?
108	2		Does the DOE plan to manage the NTS as an environmental showcase ?
109	3		Does the DOE realize that there may be more potential risks with moving contamination, than with leaving it where it is ?
			Does the DOE take a case by case look at each new cleanup operation or cleanup endeavor ? If yes, what are the steps ? If no, why ?
110	4		Is the DOE trying to make more appropriate and compatible goals for the resources at the NTS ?
111	5		Why are the infecture maps missing? Doesn't the DOE realize that this would avoid costly delays and duplications ?
112	6		Why is the DOE exempt from state water laws ?
113	7		What is the DOE's definition of "primary mission activities", and it's explanation on how the NTS's future plans fit into this "mission" ? Be specific
114	8		Does the DOE acknowledge the nuclear testing that sent radiation over Southern Nevada and Southern Utah as adversely affecting the health of residents there ?
115	9		Does the DOE wish to strike a balance between protecting natural resources and allowing existing activities to continue, as well as new uses established ?
116	10		Is the DOE looking at the rest of the NTS to see where plants and animals are now and making plans to maintain these population levels ?
117	11		Does the DOE plan to manage for biodiversity, yet allow plans for future economic development and expansions ?
118	12		Is the DOE going make sure the ecosystem management is not just used as a tool for DOE, DOD, and contractors to keep their jobs ?
119	13		Will the DOE put a practical meaning the term "how clean is clean" ?

4/8/96: summarized by ECDixon, CAB Technical Advisor

RMP: page 1

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments -- RESOURCE MANAGEMENT PLAN

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
120	14		Does the DOE have a plan to make sure future plans do not worsen the site ? If yes, be specific and explain. If no, why ?
121	15	pg 2-2, Table 2-1	Has a Soil Conservation Service soil survey been done on the NTS ? And if not, why hasn't a survey been done ?
122	16		What is the definition of subsurface water ? How deep is the water and what is the DOE's perception of interconnections of the water basins ?
123	17	pg 2-3, step 3	Why isn't the CAB mentioned as "other interested parties" ?
124	18	pgs 3-4, 3-5	Is there halogeton [sp. Glomeratus] on the NTS ?
125	19	pg 3-8, sec. 3.2.8	Why aren't natural resources that are used for economic, recreational or social benefits mentioned ?
126	20		Has the DOE established RMP goals on an appropriate scale ?
127	21		Does the DOE agree that public monitoring is a crucial step to predict impacts and find suitable land uses ?
128	22		Why aren't maps identifying facility and other infrastructure features available ? Shouldn't the maps have been available during the comment period ?
129	23		How do future plans fit into the DOE's "primary mission activities" ?
130	24		How are future water needs of the NTS planned for ?
131	25	sec. 4.11	Does the DOE realize that socioeconomic boundries do not lie totally within the Nye County boarders ? Does the DOE consider Lincoln County ?
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4/8/96: summarized by ECDixon, CAB Technical Advisor

RMP: page 2

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments --TRANSPORTATION

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
132	1	Volume 1, Appendix I	Transportation & all of its issues are of vital concern to rural Nevadans, especially those in Lincoln County which is under consideration for both truck traffic, heavy haul route, or rail shipments
133	2	pg 2-3, Table 2-1, line 55	Why was a meeting for Lincoln County stakeholders on transportation issues held in Las Vegas at UNLV ? Other affected communities held meetings in their respective communities
134	3	pg 3-10, line 30	Waste Definitions: This is a place where definitions are provided for comparison & clarity in the EIS. Why is there no comparison for clarity regarding the interrelationship between waste programs/destinations for NTS, Yucca Mtn, & Nellis Range Complex?
135	4	pg 3-14 thru 3-23	If Yucca Mountain becomes the repository for the nation's high level waste, how will that decision affect the potential routes of low level waste into & through all of southern Nevada ?
136	5	C-137 to C-150	With respect to expanded use truck routes & traffic fatality risks, is it safer to route waste around populated areas even though major transportation routes go through heavily populated areas ? Will routing avoid populated areas ?
137	6	pg D-4, line 28-32 & pg D-5, line 4-7	Why is there not an integrated approach between the Yucca Mountain EIS & the NTS EIS ? The NTS EIS can no longer defer to the Yucca Mtn EIS for the integration of transportation issues. The NTS EIS will have to do a its own transportation study that is independent of Yucca Mtn & is able to stand on its own. TRUE or FALSE and please explain ?
138	7	pg F-2, line 30-34	The route described from Crestline to Sheep Springs to Buckboard Draw and to Condor Canyon, does this route make good geographical sense because these places do not line up ?
139	8		Can the DOE explain how the Final NTS EIS & the Record of Decision will discuss the issue of transportation ?
140	9		Why doesn't the DOE take a more "active" role in the transportation decisions ? This is in reference to the specification of routes, criteria & approvals required for deviation from routings & carrier responsibilities
141	10		Does the DOE feel that the "fast track" pace of the Record of Decision (ROD) gives adequate time for the public to discuss the routing of waste issue & will the ROD emphasize a need for continued dialogue between DOE & the public ?

4/5/96: summarized by ECDixon, CAB Technical Advisor

TRANSPORTATION.page 1

ORGANIZATION 5 (CONTINUED)

TRANSPORTATION COMMENTS

COMMUNITY ADVISORY BOARD NEVADA TEST SITE PROGRAMS

CAB

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5/1/96.

ORGANIZATION 5 (CONTINUED)

APPENDIX A.
ORIGINAL COMMENT INFORMATION

NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS, 5/1/96.

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments --TRANSPORTATION

	CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
142	11		Does the DOE, local governments, & the state need to work together to define a methodology & criteria for nuclear waste shipments ?
143	12		How did the DOE select the routing alternatives for Nevada ? Routes seem to be weighed more towards the urban areas where rapid growth already effects highways that may be unsuitable for increased traffic flow
144	13		How will the DOE consider the transportation of low level waste with respect to high level waste if interim storage becomes a reality for Area 25 at the NTS ?
145	14		Given the number of sites that plan to ship waste to the NTS for disposal based on information given in the WMPEIS, does the DOE accurately know how many shipments of waste are actually slated for the NTS ?
146	15		Areas on the Nellis Range adjacent to Area 51 are being considered for shipments of nuclear waste with respect to the Yucca Mountain program. Since this area is classified & has an active training mission, is this route an option for the NTS EM program ?
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4/9/96 summarized by ECDixon, CAB Technical Advisor

TRANSPORTATION page 2

ORGANIZATION 5 (CONTINUED)

These comments were incorporated in previous Organization 5 responses.

Memorandum

To: CAB EIS Subcommittee

From: Alternative 1 Committee

Date: April 4, 1996

Subject: Preliminary NTS EIS Comments

The Alternative 1 Committee (Diane Cravotta, Connie Simkins, Joanne Stockhill, and Jim Henderson) and Earle Dixon did not formally meet to develop comments. Diane and Earle did meet on 4/3/96 from 2:30-4:30 pm to discuss the development of EIS comments using the spreadsheet format. Connie gave some written comments for Alternative 1 to be included in the committee's work. Diane talked with Joanne about her comments and these are also included. Jim Henderson relinquished his responsibility to comment since he was an author of the EIS.

PRELIMINARY COMMENTS

A1.1 Defense: under scenario one, the EIS states that underground testing activities would continue as they were 3-5 years ago. Readiness to test under this alternative should be planned with consideration of current, world political conditions that have changed over the past 3-5 years.

A1.2 Defense: (occupational & public health & safety) if under scenario two the President directs the DOE to resume underground testing, the amount of nuclear bomb material (weapons grade plutonium) stored at the NTS should be minimized.

A1.3 Defense: if under scenario two the President directs the DOE to resume underground testing, there should be no testing of nuclear weapons at or below the water table.

A1.4 Defense: (occupational & public health & safety) page 3-4, sentences 9-10, if special nuclear materials testing is to be done at the Tonopah Test Range, then stakeholders must be informed and included in the planning to ensure containment and minimize impacts to the public..

A1.5 Geology/Soils: seismic motion, disturbance, and contamination negatively impact the environment during underground test activities of the Defense Program.

A1.6 Defense: under the first scenario, the destruction of damaged nuclear weapons should be clarified so that stakeholders do not think that damaged weapons may be destroyed by detonation at the NTS.

A1.7 Waste Management: the Greater Confinement Disposal pilot program should be presented to stakeholders and the implications for greater than class C waste to be managed at the NTS.

A1.8 Waste Management: stakeholders need to be educated about the different classes of LLW especially greater than class C waste as part of any public involvement plan for waste management.

A1.9 Environmental Restoration: the prioritization of CAUs should agressively involve stakeholders in the process.

A3.10 Environmental Restoration: stakeholders should be presented with the plan and calendar of events for the cleanup of DNA CAUs.

A1.11 Cultural Resources: Native American consultation and involvement with EM programs at the NTS should continue on a regular basis.

ORGANIZATION 5 (CONTINUED)

Memorandum

To: CAB EIS Subcommittee

From: Connie Simkins

Date: April 3, 1996

Subject: NTS EIS Comments on Alternate 3

Connie Simkins comments for Alternate 3

Affected Environments

Land Use and Airspace
We Believe that the airspace should be partially delisted so that private and commercial flights can fly shorter, safer routes passing over NTS and Nellis Range Complex. This is a coming thing with FAA to un-restrict flight paths to give pilots freedom to chose own routes, elevations to use short cuts and avoid storms.

Transportation and Waste Management
Each program should be interconnected or integrated. Each shipment and truck affects each other program such as NTS ongoing activities trucks and Yucca Mountain activities and Nellis Range complex trucks all affect the same environment and should be considered a part of the whole picture.

Socioeconomics
Put man as top priority, employment, technology and scientific research. Do not destroy any plant life now present but do not manage for an environmental showcase that excludes man's top priority.

Geology and Soils
Prepare a detailed soil survey such as is done by Soil Conservation Service which will reveal which soils and locations can sensibly handle increased traffic and disturbances.

Survey Hydrology and Groundwater
Make top priority for available water to economic development and research and technology.

1

ORGANIZATION 5 (CONTINUED)

NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE TWO: DISCONTINUE CURRENT OPERATIONS

CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
1	A-29 LINE 29 F 30	WHAT IS THE PERCENTAGE OF GREATER THAN CLASS C WASTE MENTIONED HERE?
2	A-29 LINE 29 F 30	(2 COMMENTS)
3		WHERE IS THIS WASTE COMING FROM AND WHAT IS IT'S HIGH SPECIFIC ACTIVITY AREAS?
4		SALINITY
5	GENERAL	LONG TERM MAINTENANCE AND IS MENTIONED OFTEN BUT THERE IS NO MECHANISM OF FUNDING TO PAY FOR THIS. FUNDING IS CONSTANTLY VOTED TO YEAR AND SUBJECT TO CHANGE AT THE WHIM OF WILLFUL WHY CAN'T THE GOVERNMENT SET UP AN ENDOWMENT FUND (FROM CONFISCATED ASSETS FOR OTHER REASONS) TO INSURE THE REQUIREMENT FOR LONG TERM MAINTENANCE & SECURITY IS MET?
6		
7		
8		
9		THERE IS NO MENTION IN THE EIS, BUT IS COLLOIDAL MOVEMENT OF RADIOACTIVITY IN WATER AND SOILS A POSSIBLE PROBLEM IN THE FUTURE?
10		
11	SITE LINE 30-33	HAVE'NT TRITIUM READINGS BEEN DETECTED OUTSIDE THE NORTHWEST CORNER OF NTS?
12	S-29 LINE 1-9	NTS BOUNDARY

CAB comment #	Location and/or line no. in EIS doc.	NTS CAB COMMENT
13		WHY DOES THE DOE EXCLUDE THE YUCCA MOUNTAIN EIS IMPACTS FROM THE NTS EIS?
14		
15		

4/5/96: summarized by ECOtech, CAB Technical Advisor

ALTERNATIVE 2 page 1

Page 2 of Connie Simkins comments for Alternative 3:

Biological Resources
Again protect what is presently in healthy condition at NTS, do not manage for an environmental showcase. Use reason and prudence in priorities.

Air Quality and Climate
Continue to monitor and adjust on a case-by-case basis viewing man and new technology as top priority.

Noise
Expanded uses will contain more noise levels, probably not to an unacceptable level, just an increase in what is there today. This expansion of noise levels is acceptable as monitored and adjusted site specific.

Visual Resources
Do not obtain visual or viewsheds to lockup the mountain tops to the exclusion of other current and potential future uses. Locking up viewsheds should not be done.

Cultural Resources
Restrict collections and studies by students and researchers unless specific and managed by Native American tribes consensus.

Occupational and Public health and safety
Maintain current programs for monitoring air and water and soil movements and changes. Keep in effect training and common sense to guard everyone's safety while learning how to more effectively use what we know to be safe at NTS

Bill - call me if you have any questions. Thanks.

Memorandum

To: CAB EIS Subcommittee

From: Alternative 3 Committee

Date: March 26, 1996

Subject: Preliminary NTS EIS Comments

The Alternative 3 Committee (Bill V., Richard N., Chris B., & Frank T.) and Earle Dixon met on 3/25/96 from 3-5 pm to discuss their part of the EIS document. The committee input was generated from Bill, Richard, and Earle. Chris left at 4 pm and Frank Tussing was not informed of meeting but was out of town. Chris said he would provide input later. A call is in to Frank to get his input.

PRELIMINARY COMMENTS

A3.1 Visual Resources: the solar program would have the greatest, negative impact on this part of the environment. Based on impact to the visual resource, it is preferable to locate the solar program at the NTS.

A3.2 Cultural Resources: all activities under Alternative 3 appear to impact Native American cultural resources in some manner. Native American people should be involved and consulted in programs of major land disturbance so they can monitor their sites and manage the protection of their heritage as much as possible.

A3.3 Land Use: a cumulative comparison table of the five major program categories and their calculated land use areas and effected environment areas is needed for the reader to understand the land use impacts of Alternative 3.

A3.4 Land Use: the solar program if located at the NTS offers the greatest, negative impact on this part of the environment because of the loss of natural habitat. Location of the solar program at the NTS is the least advantageous of the proposed sites. Location of the solar program in a dry lake bed will have less of an impact on existing land use and existing natural habitat.

ORGANIZATION 5 (CONTINUED)

A3.5 Geology/Soils: seismic motion, disturbance, and contamination negatively impact the environment during underground test activities of the Defense Program. The solar program would also disturb a significant amount of the soils at the NTS.

A3.6 Surface Hydrology/Groundwater: the estimated water supply demands of the solar program if located at the NTS would negatively impact the groundwater system which is inadequate to meet the program needs. Large volume groundwater pumpage at the NTS over a long period of time also creates concern about flow paths and transport of contaminants.

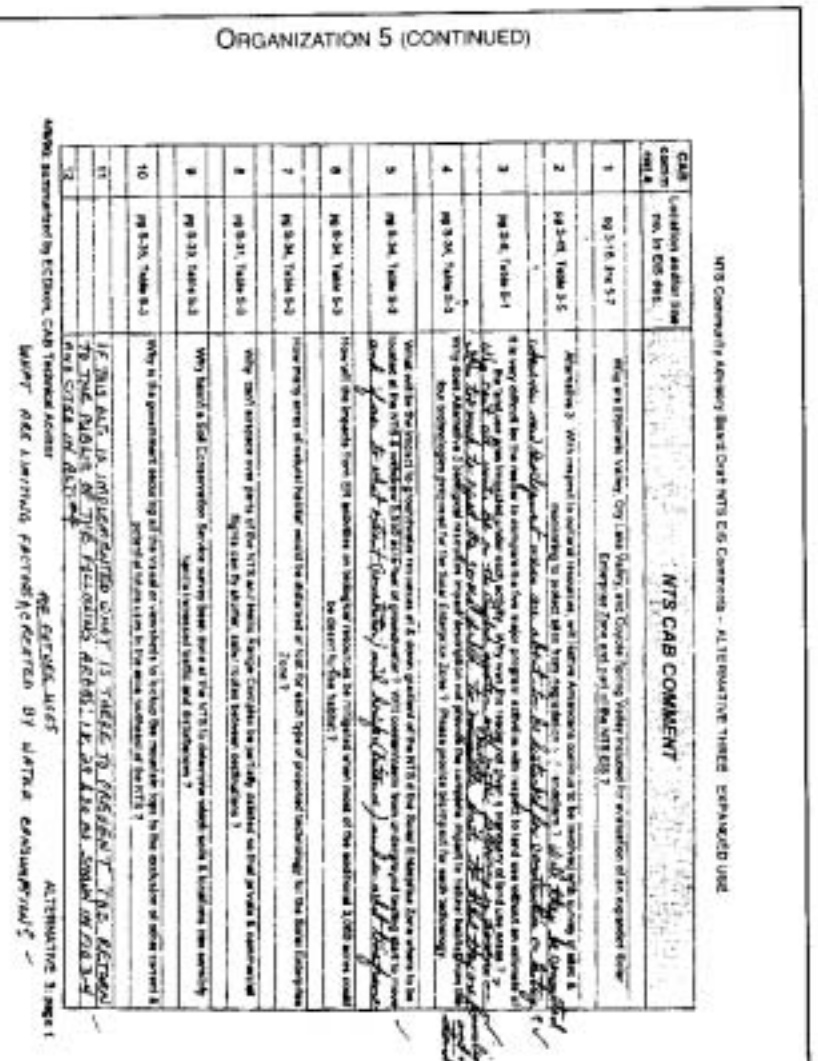
A3.7 Biological Resources: impacts to this environment are observed in the ER program and the solar program. The ER program would disturb approximately 7,200 acres of habitat during cleanup and then make it available for some future land use. The solar program would disturb 2,400 acres of habitat and the land would not be available for any other use except solar.

A3.8 Transportation: under Alternative 3 the existing NTS roads can handle the increase in traffic. Non-NTS roads with an F class rating, particularly the Hoover Dam route are the least preferred route for waste shipments to the NTS.

A3.9 Socioeconomic: Alternative 3 has the greatest positive, socioeconomic impact and the most potential for socioeconomic return to the community of the four alternatives.

A3.10 Hybrid Alternative Recommendation: the activities proposed under Alternative 3 should include an area that is restored and made available for potential turn back to the public. This area would encompass Areas 18, 30, and 29 in Figure 3-4, page 3-24 which would be included in Figure 3-3, page 3-18.

ORGANIZATION 5 (CONTINUED)



NTS Community Advisory Board Draft NTS EIS Comments – ALTERNATIVE THREE EXPANDED USE

CAB comment number	Location and/or Sec no. in EIS (Pg.)	NTS CAB COMMENT
1	Pg 3-16, Para 3.2	Why are Ellsworth Valley, Dry Lake Valley, and Coyote Spring Valley included for evaluation of an expanded Solar Enterprise Zone and not in the NTS EIS?
2	Pg 3-41, Table 3-5	Alternative 3 - With respect to natural resources, will native Americans continue to be involved in the survey & monitoring to protect sites from degradation?
3	Pg 3-4, Table 3-1	It is very difficult for the reader to compare the five major projects stated in table 3-1 to land use without an estimate of the land area impacted by each activity. Why have you not provided this information?
4	Pg 3-34, Table 3-3	Why does Alternative 3 designate industrial activities around Mercury and Area 12 as Conservation (Preservation) and provide the complete opposite with respect to nuclear testing/future testing? Why not designate these areas for low intensity use?
5	Pg 3-34, Table 3-3	What will be the impact to groundwater resources at S. Jackass Flat if the NTS is the Solar Enterprise Zone where to be located at the NTS? Reference 3.1.3.2.2.2 Part of groundwater in this contaminated from underground testing (and) may not be suitable for solar technology. Please provide background for this statement.
6	Pg 3-34, Table 3-3	How will the impacts from EIS activities on biological resources be mitigated when most of the additional 2,400 acres could be open to the public?
7	Pg 3-34, Table 3-3	How many acres of natural habitat would be disturbed or lost for each type of projected technology for the Solar Enterprise Zone?
8	Pg 3-31, Table 3-3	Why isn't extensive rock parts of the NTS and Nellis Range Complex be partially classified as final private & commercial Big Horn Sheep by Mother Lode Nellis Desert Coordinators?
9	Pg 3-33, Table 3-3	Why haven't Soil Conservation Service survey been done at the NTS to determine which soils & locations are specially suited to support public and disturbance?
10	Pg 3-35, Table 3-3	Why is the government acquiring this visual or recreation to bring the Nevada Test Site to the exclusion of some current & potential future uses in the west volume of the NTS?
11		IF THIS AREA IS UNDERSTOOD DON'T IS THERE TO RESTORE IT TO THE PUBLIC AT THE RECORDS AREAS IF THE SOLAR ARE ALSO
12		

Entry: ALL ENTRIES FACILITATED BY WATER ENVIRONMENTAL

ALTERNATIVE 3, page 1

ORGANIZATION 5 (CONTINUED)

To: CAB EIS Subcommittee

From: Alternative 4 Committee

Date April 19, 1996

Subject: 2nd Preliminary NTS EIS Comments

2nd Preliminary Comments

A4.1 Land Use/Airspace:

* Under the Nondefense Research & Development Program, Land areas previously designated as nuclear test zones and nuclear and high explosive test zones would be designated as Nondefense Research and Development Program testing zones. If the new Solar Enterprise Zone activities are to occur at the NTS, the following questions will apply:

1. Identify the estimated size of land to be set-aside for the SEZ.

2. Identify the level of contamination to the proposed land site(s):
   - Type of contaminated materials
   - Depth of subsurface contamination

3. Identify the specific technology and equipment that will be used to cleanup the proposed site(s).

4. Identify the level of "how clean is clean" will the proposed site(s) be for the construction and operation of the SEZ.

5. Identify the estimated time-frame & cost for the following:
   - Cleanup of the proposed site(s)
   - Construction and development of the SEZ
   - Annual operational cost of the SEZ

* Under the Work for Others Program, the restricted airspace that overlies the NTS would be relinquished and would be available for commercial and general aviation use.

1. Identify the average number of flights per week, associated with the Defense Program and the Work for Others Program, that utilize the airspace over the NTS and the surrounding communities for the fiscal years 94',95' and 96'.
   - Identify the size of aircrafts; Class of aircrafts; And type of aircrafts, associated with the Defense Program and Work for Others Program

2. Identify the estimated number of commercial and general aircraft that are anticipated to occupy the airspace over the NTS and the surrounding communities on a weekly basis.
   - Identify the size of aircraft(s); Class of aircraft(s); And types of aircraft that will be permitted to occupy the airspace over the NTS and land at the NTS.

ORGANIZATION 5 (CONTINUED)

3. Per Volume 1, Chapters 1-9, Part B, page 5-219, line 5: Describe the difference between commercial aviation use and general aviation use.

4. Identify the current technology being used at the NTS to monitor/control aircraft occupying airspace and landing at the NTS.
   Also, identify the category of flight controllers and the number of flight controllers and support staff at the NTS.

5. Identify the anticipated enhancements to the current technologies that will be needed at the NTS to monitor/control future aircraft occupying airspace and landing at the NTS.
   Also, identify the anticipated number of flight controllers and support staff required for the new influx of aircrafts.

6. Identify the estimated annual cost to monitor/control aircraft occupying airspace and landing at the NTS.

A4.2 Transportation/Waste Management:

* Under the Waste Management Program, identify the types of containment casks and the type of vehicles that will be used to transport Transuranic Waste/Mixed Transuranic Waste off-site to the WIPPs facility.
Also, identify the types of containment apparatus and type of vehicles that will be used to transport Low-Level Liquid Waste/Mixed Liquid Waste from their source of generation to the Liquid Waste Treatment Facilities.

* Under the Environmental Restoration Program, identify the types of containment apparatus and type of vehicles that will be used to transport contaminated soils and materials to storage and disposal facilities at the NTS.

* Under the Nondefense Research & Development Program, it is anticipated that a substantial increase in traffic will occur at the NTS.

1. Identify the proposed infrastructure development and enhancements that will be needed in order to handle the major influx of daily trips within the NTS.
   Also, identify the associated cost relative to the infrastructure development.

* Under the Work for Others Program, it is anticipated that a substantial increase in traffic will occur at the NTS.

1. Identify the proposed infrastructue development and enhancement work that will be needed in order to handle the major influx of daily trips at the NTS.

ORGANIZATION 5 (CONTINUED)

A4.3 Socioeconomics:

* Under the Defense Program and the Work for Others Program employment losses would occur affecting both direct and secondary jobs.

1. Identify DOE's contingency plans for picking up those displaced workers in an effort to reduce and /or eliminate the unemployment rate.

A4.4 Geology & Soils:

* Under the Environmental Restoration Program, the activities are anticipated to result in adverse impacts to geologic media, processes and/or resources. Based on the Defense Program, Waste Management Program, and Work for Others Program, the geology & soils would be negatively impacted if environmental restoration activities were not forthcoming quickly to avoid any increase in soil erosion and contaminated dust from infiltrating the surrounding areas.

1. Identify the areas or locations that will be selected for environmental restoration.
2. Identify the sq. miles that will be cleaned up and restored.
3. Identify the time-table, estimated start/completion dates, for cleaning up and restoring each area or location.
4. Describe the technology and equipment that will be used for site(s) clean up.
5. Identify the level of how clean is clean for each location.

A4.5 Surface Hydrology & Groundwater:

* Under the Waste Management Program, identify the safety features emplaced to prevent the storage and processing of Low_Level and/or Mixed Liquid Waste from migrating into the groundwater.

A4.6 Biological Resources:

* Under the Waste Management Program identify DOE's near future plans, for the development of new methods for the safe and environmentally sound disposition of high explosives in area 11 and other possible areas at the NTS.

* Under the Environment Restoration Program, identify the process to be used and the length of time it would take for DOE to revegetate an area after the cleanup is complete.

ORGANIZATION 5 (CONTINUED)

* Under the Nondefense Research & Development Program, identify DOE's precautionary steps to minimize the destruction of the ecosystem within the proposed Solar Enterprise Zone.

A4.7 Air Quality & Climate:

* Under the five programs, identify to what level the air quality will be affected.

A4.8 Noise:

* Under the five programs,identify the off-site noise level based on the increase of NTS activities.

A4.9 Visual Resources:

* Under the Nondefense Research & Development Program, identify DOE's plans for managing the SEZ, if the zone is located off-site at either Eldorado Valley, Dry Lake, or Coyote Springs.

Will DOE assume all liabilities that would negatively affect the surrounding property values, due to visible obstruction of views and eyesores to the landscapes.

ORGANIZATION 5 (CONTINUED)

Connie Simkins comments on Volume 2 Framework for Resource Management Plan
January 1996 draft EIS for NTS
March 1, 1996

There is a public perception that there is no difference between the Air Force, Department of Energy, Bechtel, or BLM. They are all thought of a "government". All of these have maintained a certain level of secrecy in their operations about what was being done at NTS. Perfect example is Area 51. Much of the public opinion comes from the treatment of the persons who contracted cancers because of the above ground nuclear testing that sent radiation over Lincoln County adversely affecting the health of residents here.

We were told the test were "safe" yet we still have people dieing of radiation related reasons. People who were employed on areas of the test site were kicked off, miners, hunters, ranchers, casual uses completely stopped. We were told in the beginning that the restrictions would last only as long as the military needed the area from training for World War II. Well we all know how long ago that was over and the military and DOE still have control over the NTS area, plus they are extending that control to include the "view shed" concepts in many areas.

I think we must be most careful in setting priorities on how to manage NTS. There should be a direct balance between protecting the natural resources on NTS and allowing the existing activities to continue and new uses to be established. Man should have first priority, technology development and related economic development should be emphasized.

Do not manage for an environmental showcase. Take a look at where the plant and animals species are now and how healthy these populations are. Alternative 1 says the Pahute Mesa and Yucca Flat areas will continue to be used for "weapons readiness" tests. Ok then look at the rest of the NTS and see where the sensitive plants and animals are now and make plans so these populations will maintain healthy levels, not expanded, not eliminated, - a true balance as nature intended it.

It is OK to manage for biodiversity but put a sense of reality into the plans to allow future economic development and expansions. Make sure ecosystem management is not just a tool for DOE, Bechtel, DOE to save their jobs. A lot of paperwork, studies, reviews, plans, and shuffling can go into a complicated ecosystem management. Put common sense into it. Make it real. We must put in a practical sensible function of "how clean is clean". Make sure future plans don't make things worse by trying to clean something up and move it, rather than dealing with it safely on site. Take things on a site by site and case by case basis, rather than painting the whole NTS operations by a broad brush that must be "ecosystem" managed to the detriment and elimination of jobs and chances to develop new ideas to help people.

ORGANIZATION 5 (CONTINUED)

Page 2-3 Table 2-1 Resource issues

Under Land category - has a USDA Soil Conservation Service soil survey been done on NTS? This information would apply here if available.
Water category - what is definition of subsurface water - how deep - what is DOE perception of interconnection of basins of water?
Page 2-3 Step 3 management actions
Include the CAB on lines 24 and 26 as "other interested parties".
Section 3.2 characteristics of environment
pages 3-4 and 3-5 tell us that no species have been destroyed to date as a result of operations at NTS and no plant species are endemic (prevalent in or peculiar to an area) at NTS. This supports my earlier suggestion to manage the area on a site by site specific basis. Look at what is there, mange to keep it while allowing current and future uses to flourish. Is there halogens at NTS?

Page 3-6 section 3.2.5. use of natural resources at NTS
It says not much of the natural resources are used for economic, recreational or social benefits. This is because people have not been allowed on NTS.

RMP goals should be established at appropriate scales. Agree we should develop compatibility goals for resources of greatest importance and most likely to be affected - man - business - status quo priorities. Agree monitoring is crucial step to predict impacts and find suitable land uses.

Question: Page 4-3 section 4.2 site support activities. When will the maps identifying facility and other infrastructure features be available?

Question: Section 4.5 Water page 4-5 Why is DOE exempt from State water law. Define what the primary mission activities are? How do future plans fit into the DOE "primary mission activities" ? How are future water need planned for?

Section 4.10 Airspace - With the ban of nuclear tests both above and below ground, I see no need to maintain restriction over NTS. Yes, I support restriction during times of active training at Bombing Range. This is necessary and desirable. But let the pilots, private and commercial fly over NTS. The big lid of secrecy is off now. Travel times and expenses would be greatly enhances if pilots did not have to detour around NTS.

Section 4.11 Socioeconomic page 4-8. NTS is not located entirely within Nye County. Area 13 straddles the Nye Lincoln line and Area 51 is in Lincoln County, plus all the "viewsheds" taken out of public land status recently are in Lincoln County. This is a use solely connected to NTS and lies in Lincoln County.

Connie Simkins - comments about Management Framework Plan for NTS EIS
March 15, 1996

DOE must build the people's trust in government. The general public sees DOE, NTS contractor, BLM, Air Force, all as "government" and not to be trusted. I attended the NTS EIS public comment meeting in St. George, Utah on March 5, 1996. Eleven people offered public comments, ten were distrustful of DOE. One resident offered the suggestion DOE build a new freeway from Atlantic to Pacific that skirted around all major population centers, specifically avoiding Virgin River gorge, and routed across Lincoln County to NTS for transportation of all kinds of wastes and operations at NTS.

Put together plans that views man as top priority, technology development, economic development. Maintain NTS for what is there now. Do not manage for a environmentally clean showcase. Some cases it cases more problems and health risks to move the contamination than to cover it over where it is now. Put common sense into all dictions on biodiversity. Take a case by case look at each new operation or cleanup endeavor.

Make appropriate and compatible goals for resources at NTS, again putting Man at the top of the list, followed by business and maintaining the status quo.

The MFP is missing the infrastructure maps. Imperative that information be included on what is there now to avoid costly delay and duplications.

Why is DOE exempt from state water law. I recommend we get a definition of "primary mission activities", and an explanation on how NTS future plans fit into this "mission". Be specific.

Airspace - new technology being introduced that will allow pilots to fly where they want to maximize weather conditions and flight times. I realize ongoing training at NTS and Nellis range must continue. Develop a system that identifies for pilots when operations are not going on so commercial and private flights can take advantage of the shortcuts over top of NTS.

Transportation - develop a specific contract for every shipment going into NTS, routes, stops, liabilities, insurances, responsibilities, and accountabilities.

Memorandum

To: CAB EIS Subcommittee

From: Connie Simkins

Date: April 3, 1996

Subject: Preliminary NTS EIS Comments on Transportation

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1. Transportation is the number one issue of concern for rural Nevada.

2. There is no inter-relationship between the ongoing EISs: NTS EIS, Yucca Mountain Project (YMP), and Nellis Range Complex (NRC) EIS. The outcome of the Record of Decision and implementation of the NTS EIS alternatives will affect the other EISs. It is important to relate to other EISs affecting the NTS and the surrounding lands.

3. The strong political influence from the Clark County population will influence the routing and corresponding risk factors for transportation such that waste will be routed outside of the Las Vegas Valley on its way to the NTS. The rural areas of Nevada do not have the political clout to affect the routing of waste through the state.

3. The backroad into the northeast corner of the NTS should be further improved by paving to benefit travel conditions, time, and safety for workers and the communities.

4. The transportation study with respect to the NTS EIS can not be deferred to the YMP transportation study. The NTS EIS has to include the cumulative impact from the NTS, YMP, and NAFR transportation issues. There has to be an integrated approach to all transportation issues in and around the NTS.

5. Rail access study described on pages F-2 and F-3 is erroneous. The proposed route for rail from Crestline to Sheep to Panaca to Condor Canyon does not make geographical sense.

6. The transportation study should make sure it includes the study and numbers of Lincoln County residents that commute to the NTS by the backroad (Gate 700). The study should also not forget Nye County residents that commute to the NTS.

Page 2 of Connie Simkins comments on transportation in NTS EIS:

7. Develop a specific contract for each waste shipment to the NTS that identifies, routes, stops, liabilities, insurances, responsibilities, and accountabilities.

8. Alternative 1 does not reevaluate the current weapons testing requirements of the nation as they are today. The alternative proposal may be out of sync with today's conditions.

CLARK CO. NUC WASTE TEL:702-455-5190 Apr 08'96 7:20 No.002

05 April 96

To: **CAB EIS Subcommittee**
From: **Dennis Bechtel, Member**
Transportation Subcommittee

Subj: **NTS EIS TRANSPORTATION STUDY**

These are a synthesis of comments on the Transportation Study for the NTS EIS. Connie, Richard and I talked several weeks ago, and Connie provided a comprehensive review of the document. I have also included some discussion-only comments from the Transportation Protocol group (discussion only because this group will meet on April 11th and the recommendations thus have not been finalized).

1. Transportation is the perhaps the most important issue to Nevada associated with the EIS. Both rural and urban Nevadans have concerns about the numbers of shipments, the routes being taken, and the potential risk to the health and safety of the public.

2. DOE is to be commended for considering the transportation issue in conjunction with the EIS. Its obviously difficult to isolate decisions of routing, risk, emergency preparedness, and others with the on-going or proposed alternatives at the NTS

3. It is uncertain how the Final EIS and the Record of Decision will discuss the issue of transportation. The Final EIS, however, needs to discuss how transportation decisions will be made, how they will be treated in the Record of Decision, and similar.

4. DOE should take an "active" role in transportation decisions. DOE should utilize the "contract carrier" option and by contract specify routes, criteria and approvals required for deviation from routings and carrier responsibilities. DOE has had a good recent record in transporting waste with respect to minimizing accidents. With the probable increase in the number of shipments, however, DOE needs to have greater control over the carriers.

5. Routing issues will be considered carefully by the public. Given the proposed schedule for the release of the Record of Decision appears to be "fast track" it is important that sufficient time be given to deliberating this issue. The ROD, therefore, needs to state that DOE should continue to work with the local governments until transporation issues such as routing are resolved.

6. DOE and the local governments (the State should also be involved) should work together to define a methodology and criteria for nuclear waste shipments. Important considerations are population density, potential for accident, presence of sensitive areas (e.g. human and environmental) and similar.

CLARK CO. NUC WASTE TEL:702-455-5190 Apr 08'96 7:20 No.002 P.03

7. DOE should specifically address the need for enhanced emergency response capabilities especially in rural areas. DOE needs to be sensitive to the needs of rural areas especially those that rely on volunteers.

8. DOE needs to explain how the routing alternatives were selected for Nevada. The routes seem to be weighted more towards the urban areas. With the rapid growth in Clark County its difficult to understand the rationale for assuming that routings that include Hoover Dam, the "Spaghetti Bowl" (notably with the current long-term construction being initiated), and roads such as Craig and Rancho, which are experiencing substantial residential development, are reasonable transportation options.

9. The NTS EIS needs to consider potential transportation impacts (cumulative affects) from the Yucca Mountain program. As you're aware, Congress is considering the use of Area 25 for the interim storage of civilian nuclear waste perhaps as early as 1998. This will have a potentially great cumulative impact on the LLW shipments being considered in this campaign.

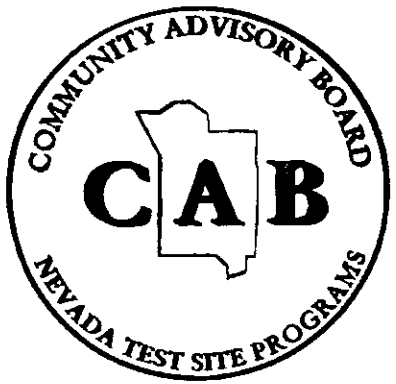
10. With respect to other sites considering the NTS for the storage, treatment or disposal of nuclear waste, it is uncertain, especially with respect to those in the Waste Managment Program, how many shipments of waste are actually slated for the NTS.

11. There is need to correct the erroneous geographical information found on F-2 and F-3. This information should be corrected with the assistance of local representatives.

12. Areas on the Nellis Range adjacent to "Area 51" are being considered for shipments of nuclear waste with respect to the Yucca Mountain program. With the realization that this is a "classified" area, and has an active training mission, is this an option for the transport of the waste in the EM program? The document needs to speak to this since the issue is on the table, and at least in one DOE document, this has been mentioned as a potential option , if it is constructed, for the transport of all shipments.

APPENDIX B.

NEVADA RISK ASSESSMENT MANAGEMENT PROGRAM (NRAMP) COMMENTS



NTS COMMUNITY ADVISORY BOARD COMMENTS ON THE NTS DRAFT EIS. 6/1/96.

UNLV

April 29, 1996

To: Earle Dixon, Technical Advisor to the Community Advisory Board
Bill
From: Bill Andrews, PI, Nevada Risk Assessment/Management Program

Subject: NRAMP Comments on the NTS-EIS Risk Assessment

As per the request of the CAB at their March meeting, I have enclosed comments from Tod Johnson, Tony Hechanova and myself of the NRAMP team. Tony made a presentation to the CAB at your April 13, 1996 meeting in Amargosa Valley Nevada to summarize his and Tod's comments. The handout from the CAB presentation may also be useful in compiling a summary statement from the CAB. My comments are similar to those made by the NRAMP on the Waste Management Programmatic Environmental Impact Statement.

Please understand that these comments come from individual NRAMP technical team members with the perspective of our own risk assessment objectives and a review of extensive data sets related to the NTS. These comments do not reflect a project position as they have not been approved by the NRAMP working group. Given the pressure of completing our Preliminary Risk Assessment, we do not plan to make a presentation on the NTS-EIS to the working group. As was previously agreed, the CAB will submit these comments as their own and are free to use them is developing recommendations to the DOE for modifications to the NTS-EIS.

We would be pleased to respond to any additional specific requests that you have.

Harry Reid Center for Environmental Studies
4505 Maryland Parkway • Box 454009 • Las Vegas, Nevada 89154-4009
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These comments were incorporated in previous Organization 5 responses.

UNLV

April 17, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Dear Dr. Elle:

I am submitting comments prepared by the Nevada Risk Assessment / Management Program (NRAMP) on the Waste Management Programmatic Environmental Impact Statement (DOE/EIS-0200-D) for your consideration in the NTS Environmental Impact Statement (DOE/EIS 0243). The majority of the comments ask for clarification of the scope and impacts related to the transportation of radioactive waste. It is appropriate that both documents address theses issues in a consistent manner.

Major discrepancies between current Nevada Test Site and other programmatic environmental documents related to the shipment and disposal of Low Level Waste (LLW) contribute to an incoherent set of federal proposals for public comment. The total number of predicted health effects and the percentage due to radiation effects are potentially significant in other documents.

Specific preferences for the alternatives described in the NTS-EIS could not be developed based on the lack of consistent information. It is apparent, however, that the high cost of development of LLW disposal and treatment facilities at distributed locations and the relatively low costs of transportation will likely result in an increased need and use of Nevada for the disposal of LLW. Increased use of rail transportation could significantly reduce both risk and cost for all alternatives except there is no offsite transportation.

Detailed comments are enclosed.

Sincerely,

Bill Andrews

W.B. Andrews

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Comments on the Nevada Test Site Environmental Impact Statement, Appendix I, Transportation Study (DOE/EIS 0243)

April 1996

Public interest is high for transportation issues. The DOE Nevada Operations Office, noted this interest in their efforts to work with members of the public, elected officials, American Indian tribal governments and private issue advocacy groups in the development of a technical report on transportation impacts associated with the Nevada Test Site Environmental Impact Statement (DOE 1995a). These groups expressed concern about continued and possible expansion of transportation of low level radioactive waste by truck on public highways in the Las Vegas valley. In response to these concerns, the DOE addressed the possible use of alternative truck routes, construction of rail access to the NTS and intermodal truck/rail shipments to the site.

Technical Adequacy of the NTS-EIS Document

This review included a comparison the NTS-EIS to other current DOE environmental documents and an evaluation of risk management opportunities related to transportation of radioactive wastes. **Discrepancies identified in current environmental documents related to the shipment and disposal of Low Level Waste (LLW) contribute to an incoherent proposal from the DOE-EM program for public comment.** A comprehensive response to the NTS-EIS is not possible without resolution of these discrepancies.

The NTS-EIS transportation study (DOE 1995a) describes shipping volumes for Low Level Waste (LLW) importation for the next ten years. The EIS land use case of "continue current operations" shows radioactive shipments from 12 offsite locations at a rate of 678 shipments per year. The EIS case of "expanded use" shows radioactive shipments coming for the next 10 years from 29 offsite locations with an average annual volume of 3946 shipments per year.

The Waste Management Programmatic EIS (DOE 1995c) was released in September 1995. The PEIS describes alternative strategies and impacts for the management of wastes from ongoing and past DOE operations that are anticipated to be shipped to and from various treatment and disposal sites over a 20 year period. Wastes from site remediation are excluded from the assessment. Implementation of a centralized storage/disposal option at the NTS for LLW, LLMW and HLW would result in the maximum number of waste shipments. A combined total of 295,000 truck shipments and more than 106,000 rail shipments could occur under this alternative.

THE NTS-EIS CONTAINS MAJOR DISCREPANCIES IN THE NUMBER OF POTENTIAL SHIPMENTS OF LLW COMPARED TO WM-PEIS ESTIMATES

Waste shipment numbers in Table 1 were summarized from the WM-PEIS. They are

reported on an annual basis to allow comparison to the NTS-EIS. Shipping volumes in Table 1 are up to 3 times higher than volumes reported in the NTS-EIS.

Table 1. Annual Shipments from the Waste Management PEIS for Nevada Storage Options

Waste Form	No Action	Decentralized	Regionalized	Centralized
Low Level Mixed Waste	No Shipments	5	1 - 482	0.5/year out, Ship to Hanford
Low Level Waste	3498	0	0 - 2945	0 - 12,400
Transuranic Waste	0, Store Onsite	4.5 / yr out Ship to WIPP	4 / yr out Ship to WIPP	4 / yr out Ship to WIPP
High Level Waste	Not Included in PEIS	Not Included in PEIS	Not Included in PEIS	Not Included in PEIS

ENVIRONMENTAL RESTORATION WASTES ARE NOT INCLUDED IN THE WM-PEIS IMPACTS AND COULD RESULT IN MUCH HIGHER WASTE VOLUMES FOR DISPOSAL AT THE NEVADA TEST SITE

The *Baseline Environmental Management Report (BEMR)* (DOE 1995b) was used in the WM-PEIS as the basis of a sensitivity study for waste shipment volumes. Results of an WM-PEIS sensitivity study (appendix B) indicated that disposal volumes could be up to 60% higher than those shown in Table 1 based on the WM-PEIS assumption that only 5% of the LLW available from site restoration would be transported to an offsite location for disposal. The reasonableness of these results could not be determined since the basis for the shipping volume estimate is based on an unpublished draft of the BEMR. The impacts of increased LLW volumes was not estimated in Appendix B.

RISK LEVELS REPORTED IN THE NTS-EIS AND THE WM-PEIS ARE NOT CONSISTENT. THE WM-PEIS RESULTS ARE MUCH MORE SIGNIFICANT AND HAVE A HIGH FRACTION OF RADIOLOGICAL HEALTH EFFECTS

Risk results are provided in the two EISs. The NTS-EIS risks for Nevada are summarized in table 2. The NTS-EIS reported relatively low total risks and the percentage of health effects due to the radiological nature of the cargo are a small percentage of the total risk. Results of the WM-PEIS evaluation of LLW risks are shown in Table 3. No Nevada-specific results were included in the WM-PEIS for the transportation of wastes. The total number of predicted health effects and the percentage of health effects due to radiation are potentially significant.

ORGANIZATION 5 (CONTINUED)

Table 3. Cancer and Non-cancer Health Effects (HE) for LLW Disposal

	Treat. Worker Mech. HE	Treat. Worker Cancer HE	Percent Treat. Worker Cancer HE	Disposal Worker Mech. HE	Disposal Worker Cancer HE	Percent Disposal Worker Cancer HE	Truck Cancer HE	Truck Mech. HE	Percent Truck Cancer HE	Rail Mech. HE	Rail Cancer HE	Percent Rail Cancer HE
No Action	3	1	25	4	3	43	5	12	29	0.6	1	37
Decentralized	2	1	33	6	2	25	<1	<1	n/a	<1	<1	n/a
Regionalized 1	2	1	33	6	2	25	<1	1	0	<1	<1	n/a
Regionalized 2	5	1	17	4	2	33	<1	1	0	<1	<1	n/a
Regionalized 3	2	1	33	5	2	29	2	3	40	<1	<1	n/a
Regionalized 4	5	1	17	4	2	33	2	3	40	<1	<1	n/a
Regionalized 5	5	1	17	4	2	33	2	4	33	<1	<1	n/a
Regionalized 6	3	1	25	6	2	25	3	10	23	0.6	0.6	50
Regionalized 7	3	1	25	6	2	25	4	10	28	0.6	0.6	50
Centralized 1	3	1	25	1	3	75	16	37	30	1.7	2.3	42
Centralized 2	3	1	25	1	3	75	15	37	29	1.7	2.3	42
Centralized 3	5	1	67	1	2	67	15	35	30	1.6	2.3	41
Centralized 4	5	1	67	1	2	67	14	37	27	1.7	2.3	42
Centralized 5	4	2	33	1	2	67	15	37	29	1.7	2.3	42

Data Compiled from Tables 5.3-1 and E-16, WM-PEIS

W. R. Andrews Comments on the NTS-EIS, April 1996 4

ORGANIZATION 5 (CONTINUED)

Table 2 - Offsite Population Transportation Risks from the NTS-EIS for 10 years - Low Level Waste & Safe Secure Trailers

	Deaths (Latent & Mechanical)	Injuries (Mechanical)	Cargo - Related (latent cancers)	Cargo Percentage of Total
Alternative 1 - Present Operations	2	27	0.002	0.1
Alternative 2 - Discontinue Operations	minimal	minimal	minimal	n/a
Alternative 3 - Expanded Use	7	97	0.06	0.8
Safe Secure Trailers (30 shipments)	n/a	n/a	Incident Free- 0.000016 Accidents - 0.000007	n/a

n/a - not available

Criteria That Should be Considered in Selecting Preferred Alternatives and Making Final Decisions

Relative to LLW treatment, transportation and disposal, it is apparent from the results of the NTS-EIS that transportation is the dominant source of public risk and that treatment and disposal are dominant for worker risks. It is also apparent that development of disposal facilities is expensive relative to transportation. This presents decision makers with the dilemma of trading off dollar savings for potential increases in public and worker risks.

Preferences for Alternatives Evaluated for LLW

Specific preferences for the alternatives described in the NTS-EIS could not be developed because of the lack of consistent information in the three environmental documents. It is apparent, however, that the high cost of development of LLW disposal and treatment facilities at distributed locations and the relatively low costs of transportation will likely result in an increased need and use of Nevada and/or other sites for the disposal of LLW. Public review of revisions to the NTS-EIS that reconcile the previous comments on waste volumes and risk along with additional opportunities for public education on the overall DOE-EM program would increase public understanding and comment.

W. R. Andrews Comments on the NTS-EIS, April 1996 5

ORGANIZATION 5 (CONTINUED)

Table 4. Risk and Cost Impacts of Using Rail for LLW Transportation

Alternative	Total Fatalities System (Truck)	Total Fatalities System (Rail)	Risk Reduction (Use Rail)	Risk Reduction Percent (Rail)	(Billions of 1994 Dollars) Total (Inc. Truck Costs)	Rail Savings	Total (Inc. Rail Costs)
No Action	28	12.6	15.4	55%	17.9	-0.07	17.97
Decentralized	11	11	0	0%	16.3	0.03	16.27
Regionalized 1	12	11	1	8%	16.2	0.04	16.16
Regionalized 2	14	12	2	14%	20	0.04	19.96
Regionalized 3	15	10	5	33%	14.7	0.16	14.54
Regionalized 4	17	12	5	29%	19.7	0.15	19.55
Regionalized 5	18	12	6	33%	19.6	0.26	19.34
Regionalized 6	25	13.2	11.8	47%	12.7	0.48	12.22
Regionalized 7	26	13.2	12.8	49%	13.6	0.49	13.11
Centralized 1	61	12	49	80%	11.9	2.02	9.88
Centralized 2	60	12	48	80%	11.8	1.82	9.98
Centralized 3	59	12.9	46.1	78%	17.9	1.91	15.99
Centralized 4	60	13	47	78%	17.8	1.72	16.08
Centralized 5	61	13	48	78%	14.9	2.02	12.88

Data Compiled from Tables 5.3-1, 5.3-2, and E-16, WM-PEIS

W. R. Andrews Comments on the NTS-EIS, April 1996 4

ORGANIZATION 5 (CONTINUED)

Increased use of rail transportation could significantly reduce both risk and cost for all alternatives except in the case where there is no offsite transportation. Table 4 summarizes information from the WM-PEIS. The WM-PEIS indicates a slightly higher cost for the "no action" case if rail transportation would be used for all sites. All other cases show cost reductions ranging from $30 million to $2 billion. Risks would be significantly reduced for all alternatives except where transportation is not used. These reductions range from 8% to 80% of the total system risk.

If rail transportation were used, risks of all the alternatives for LLW disposal would be comparable in terms of their total predicted health effects. It is, of course, a very crude estimate to sum risks of the public, workers, and future generations, but when the total risk magnitudes are similar, discussions about the acceptance of risk could have a different tone than the current situation where the motoring public and roadside residents would experience the greatest portion of total risk in order to achieve relatively modest reductions in future risks to communities that are near DOE facilities.

Rail transportation could reduce concerns about the EM activities in Nevada. Currently truck shipments travel primarily over Hoover Dam, through the largest cities in Nevada and then to the NTS due to routing restrictions imposed by current US Department of Transportation regulations. Rail shipments could allow greater DOE discretion in the development of alternative routes that could avoid these areas because there are currently no rail routing regulations and intermodal transfer points could be chosen that would better meet local needs.

References

DOE 1995a, *Nevada Test Site Environmental Impact Statement, Appendix L. Transportation Study*, DOE/EIS 0243, DRAFT, United States Department of Energy, 1000 Independence Avenue, Washington, DC 20585, January 1996

DOE 1995b, *The 1995 Baseline Environmental Management Report, Estimating the Cold War Mortgage*, DOE/EM-0232, US Department of Energy, Washington DC, March 1995

DOE 1995c, *Waste Management Programmatic Environmental Impact Statement*, DRAFT, United States Department of Energy, 1000 Independence Avenue, Washington, DC 20585, September 1995

W. R. Andrews Comments on the NTS-EIS, April 1996 5

ORGANIZATION 5 (CONTINUED)

UNLV

UNIVERSITY OF NEVADA LAS VEGAS

April 18, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle:

I am submitting comments for your consideration on the Nevada Test Site Environmental Impact Statement (NTS EIS). I am a member of the Nevada Risk Assessment/Management Program (NRAMP) Technical Team at the Harry Reid Center for Environmental Studies, UNLV. The majority of my comments attempt to clarify technical discrepancies rather than dwell on philosophical approaches to improving the NTS EIS methodologies.

In addition, I am also submitting several comments based on a letter to the NRAMP Principal Investigator, Mr. William B. Andrews, from Mr. David B. Leclaire, the Deputy Assistant Secretary for Program Support, Defense Programs. In this letter (which is attached), Mr. Leclaire recommends that I look at specific areas of the NTS EIS for interesting information regarding the radiological source term. For the record, I did not find any new information in these sections of the NTS EIS and my doctoral thesis (which was completed and successfully defended in January, 1995) did not include any aspect of thermonuclear weaponry, but rather experimental investigations of fusion reactor engineering safety issues.

Itemized comments are attached in the order they come up in the NTS EIS. There is no priority given to earlier comments than later comments. I feel my comments are rarely contentious and are meant to highlight potentially significant technical or perceptional problems with the NTS EIS.

Sincerely,

Anthony E. Hechanova

Anthony E. Hechanova, Ph.D.
Nuclear Engineering

cc: Earle Dixon (CAB)
David B. Leclaire (DOE)
William B. Andrews (NRAMP)

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ORGANIZATION 5 (CONTINUED)

Itemized Comments on Human Health Risks and Safety Impacts Study in the NTS EIS (Vol. 1, App. H) with Additional Comments in Response to Mr. David B. Leclaire's Letter (attached)

by Anthony E. Hechanova, Ph.D.
Nuclear Engineering
Harry Reid Center for Environmental Studies
University of Nevada, Las Vegas
tel: (702) 895-1457
April 16, 1996

Number	Location	Comment
1	v 1, p 4-8, ll 1-22	***Problem:*** Table 4-1 is not properly referenced. ***Recommendation:*** Cite the references from which values are given in Table 4-1. For example, as regards to the Surficial Soils, I am familiar with Radionuclide Inventory and Distribution Program (RDIP) reports and figured those would be the appropriate references from the References Section 4.8 starting on page 4-318. But I am not as fortunate to know the NTS EIS references for the various "Disposal" sources or Deep Underground Tests on lines 13-22.
2	v 1, p 4-8, ll 1-22	***Problem:*** Table 4-1 is not complete. ***Recommendation:*** Modify Table 4-1 Column 4. Column 4 should at least reflect the elements of all nine major radionuclides: Americium, Cesium, Cobalt, Europium, Plutonium, and Strontium, although McArthur and Mead (RDIP Report #3, 1987) also measured several other radionuclides in the surficial soils.
3	v 1, p 4-106, ll 15-16	***Problem:*** Nowhere in McArthur's (1991) report is the inventory at Sedan Crater explicitly estimated as 328 Ci. In fact, in Area 10, the total inventory from the nine major radionuclides is 304 Ci with 12 Ci more found at Sedan from other manmade radionuclides. ***Recommendation:*** Simply remove this sentence since it is not important to the argument or adjust the statement to reflect accurate information.
4	v 1, p 4-110, ll 29-32	***Problem:*** Tritium decay is incorrectly calculated from 18,570 Ci to 3,200 Ci after 5 years.

Recommendation: *Consider the following correction:* tritium has a 12.3-year half-life and would decrease to 75.4 percent of its original amount after 5 years. Thus, 18,570 Ci of tritium decay to 14,000 Ci after 5 years.

5 v 1, p 4-110, li 29 to v 1, p 4-111, li 7

Problem: The interpretation of the work by Borg *et al.* (1976) is inappropriate considering the current knowledge of nuclear testing conducted by the United States. The numbers published by Borg *et al.* (1976, p 100-102) which are used in these lines of the *NTS EIS* are the result (*i.e.*, activation and fission products) of a fission yield except for the tritium component. Although activation of trace lithium in the NTS ground would be the major contributor of tritium from a fission detonation, the authors were aware that a significant amount of tritium would be produced from a thermonuclear device because it is one of the primary fuels in the core. In other words, tritium is no longer the result of trace amounts of lithium in the ground from a fission detonation, but rather, tritium is purposefully produced in mass in the core of a thermonuclear device to provide the fuel for fusion reactions. For this reason, the NTS EIS and Borg *et al.* (1976) are essentially comparing apples and oranges when they simply add a tritium component to a fission yield.

Recommendation: When considering the Radiological Source Term, one should be very careful to estimate the fission and fusion contributions separately since the physics involved are very different. The primary purpose of the Borg *et al.* (1976) document was to analyze contaminant migration and I do not believe that their results were intended to be applied to the characterization of a thermonuclear device as the NTS EIS has applied their work. This is best evidenced by quoting from the Borg *et al.* (1976) document and putting to light the rigor of their tritium "calculations."

"The amount of tritium deposited below or near the water table at NTS through June 30, 1975, can be crudely estimated. It is about 10 kg at Pahute Mesa and about 3 kg at Yucca Flat. The amount at Frenchman Flat is negligible. These values are for the 78 tests detonated below the water table or with a cavity radius below the water table. These estimates are probably accurate to within a factor of 2 or 3 but should not be construed as a definitive catalog of tritium deposited at NTS." (Borg *et al.*, 1976, p 103)

Therefore, I suggest removing line 27 (p 4-110) through line 7 (p 4-111) in which this rather obfuscated and possibly incorrect treatment of the Radiological Source Term is exemplified, and end

the section with the non-contentious statement of the preceding line: "The source term includes numerous isotopes that are both short-lived and long-lived."

6 v 1, p 4-111, li 1-7

Problem: The basis of the total underground radioactivity of 300 million curies (including a reference citation) has not been clarified. Thus, it is not clear in this paragraph which considerations are connected to the work of Borg *et al.* (1976): the estimate itself or the uncertainty in the estimate. In either case, the previous comment still applies: the Borg *et al.* (1976) work alone is not appropriate to determine parameters of the total underground radiological source term, especially tritium.

Recommendation: The basis (*e.g.*, methodology and calculations) of the 300 million curies should be made available to the public and open scientific community for review. This would mean releasing an unclassified version of the reference. I invoke the words of a truly eminent scientist to aid in the argument against classification. The following are excerpts from Better a Shield Than a Sword, by Edward Teller (1987).

"Today, secrecy has become a terrible destructive force in our society. My postwar efforts to reverse the process have not affected its devastating spread. I am unhappy that I had anything to do with its beginnings.

Science thrives on openness. Researchers should, and often must, share their findings.

Security regulations have helped drive a wedge between our universities and our military research and development effort.

Under present rules, research done in our national laboratories cannot be fully shared with civilian industries. When we fail to expose people to problems they could help solve, we remain unaware of the loss. We now have millions of classified technical documents. We also have falling productivity. Rapid progress cannot be reconciled with central control and secrecy. The limitations we impose on ourselves by restricting information are far greater than any advantage others could gain by copying our ideas.

In addition, by tainting science with secrecy, an unfortunate public attitude is perpetuated: Science is nobody's business but the scientists' Today, science and technology are part of the life-support system of the world. Encouraging the development of a scientifically literate public is of primary importance to everyone's well-being.

Secrecy is not compatible with science, but it is even less compatible with democratic procedure. Two hundred years ago James Madison said, "A popular government without popular information, or the means of acquiring it, is but a prologue to a farce or a tragedy, or perhaps both."

ORGANIZATION 5 (CONTINUED)

The term *credibility gap* is a modest description of our monstrous current problem."

The credibility of the NTS EIS radiological source term is at issue not only due to the secretive nature of its conception but also considering possible inappropriate use of methodologies in a referenced work (Borg, *et al*., 1976) that is available to the public.

7 v 1, p 4-159, li 13 ***Problem:*** The data in Table 4-27 is not referenced. However, the data is identical to data released by M. Pankratz of Los Alamos National Laboratory in a memo dated June 23, 1995. The methods used to estimate the data refers to a classified report: LA-CP-94-0222, "Total Radionuclide Inventory Associated with Underground Tests Conducted at the Nevada Test Site," 1955 1992 (U), September 26, 1994 (SRD), authors not given.

Recommendation: Please reference the document from which data in Table 4-27 is taken. If it is in fact the one cited above, which I strongly suspect it is, then the numbers are not for 1995, but for Jan. 1, 1994. This would make a 5 percent difference in the tritium level and affect the levels reported in the following sentence (line 15) for inventories since most of the radioactivity is from tritium.

8 v 1, p 4-159, li 20-21 ***Problem:*** I do not agree with the statement that "Most investigators have concluded that much of the radioactivity released during an underground detonation remains in the melt glass in the original cavity. . . ." This is not a true statement since 90 percent of the radioactivity listed in Table 4-27 is tritium which most investigators would conclude becomes part of tritiated water and only a small fraction would remain in the melt glass.

Recommendation: Re-write the sentence to exclude tritium as follows: "Most investigators have concluded that radionuclides other than tritium released during an underground detonation predominantly remain in the melt glass in the original cavity. . . ."

9 v 1, p 4-162, li 27 ***Problem:*** The Hydrologic Resources Management Program details refer to "DOE (1995)" which does not fit with any of the references in the Reference Section 4.8.

Recommendation: Clarify which DOE (1995) report is being referenced or add the reference if it is actually missing.

10 v 1, p 4-164, li 2-23 ***Problem:*** The superscripts in Table 4-28 are incorrect (*e.g.*, "Lazer Dyes" and "Soda Ash") or incomplete.

ORGANIZATION 5 (CONTINUED)

Recommendation: Change superscript of "Soda Ash" from "d" to "c" since Soda Ash contains theophylline, ethylenediamine, and carbonic acid disodium salt. Change the superscript of "Lazer Dyes" from "c" to "b" since Bryant and Fabryka-Martin (1991) note them as part of some detector packages. Bryant and Fabryka-Martin (1991) note that Thallium is a radiochemical detector and less than 100 grams is typically used, thus, it should have the superscript "a" added.

11 v 1, p 4-164, li 2-23 ***Problem:*** Bryant and Fabryka-Martin (1991) mention Thallium as a possible Rack and Canister material which is also listed as a Hazardous Material in their Appendix.

Recommendation: Add Thallium to Column 2 of Table 4-28.

12 v 1, Ap H, p ES-2, li 4-7 ***Problem:*** This sentence of the Executive Summary claims that the "migration of tritium-contaminated groundwater from test locations within the NTS or at the Project Shoal Area is never expected to result in tritium concentrations at the site boundaries that are detectable using present-day analytical equipment" which does not agree with the content of the NTS EIS.

Project Shoal: In the NTS EIS (v 1, Ap H, p 5-3, li 2-4), it is stated that at "the eastern boundary of the Project Shoal Area, tritium in groundwater is predicted to reach a maximum concentration of about 280 pCi/L in about 206 years." 280 pCi/L is above background levels for tritium and is easily detectable.

Recommendation: Correct the sentence to accurately reflect the contents of the document or re-write this section completely to include the worst case scenarios from DOE publications (see Comment 27, below).

13 v 1, Ap H, p ES-2, li 10-15 ***Problem:*** The NTS EIS does not quote the worst case scenarios as reported in their reference (Pohlmann *et al*., 1995) which considers the uncertainties in key transport parameters.

Recommendation: Re-write this section using values from Pohlmann *et al*. (1995) worst case scenario (see Comment 27, below).

14 v 1, Ap H, p 1-1, li 15-18 ***Problem:*** The term "evaluation of the potential environmental impacts associated with the various alternative uses of the NTS" is not qualified to the 10-year time frame of the NTS EIS.

Recommendation: Since tritium migration could be a compliance problem after the 10-year time frame (see Comments 28 and 33, below), this statement under the "Purpose" heading of the document should accurately convey the narrow scope of the evaluation. I suggest re-writing this part of the sentence as follows: "evaluation of the potential environmental impacts, over the next 10 years, associated with the various alternative uses of the NTS. . . ."

15 v 1, Ap H, p 1-1, li 15-18

Problem: The NTS EIS does not evaluate all of the various alternative uses of the NTS, *e.g.*, public exposure in released-land scenarios (Alternative 4) which would most likely contain the highest risk scenarios to members of the public.

Recommendation: Re-write the sentence to accurately convey that only the more likely alternatives in which members of the public do not have access to NTS land in the next 10 years are being evaluated as follows: "It is the intent that this EIS serve as a support tool for policy makers and stakeholders by providing an evaluation of the potential environmental impacts, over the next 10 years, associated with the more likely alternative uses of the NTS and its resources that are being considered by the DOE." I feel that this re-write truly captures the intent of the DOE in writing the NTS EIS.

16 v 1, Ap H, p 1-7, li 3-5

Problem: The lead sentence of this section of the document again misses the important nuances mentioned in the preceding two comments.

Recommendation: Re-write the lead sentence as follows: "The purpose of this report is to provide an assessment of the human health and safety impacts, over the next 10 years, associated with program activities performed under the more likely alternatives being considered in the NTS EIS."

17 v 1, Ap H, p 2-1, li 11-16

Problem: This lead line under "General Risk Assessment Concepts" is incomplete. A general risk assessment has the following components:

SOURCE->TRANSPORT->EXPOSURE->DOSE->RISK

The component of "exposure" is missing from the general concept of risk assessment.

Recommendation: Re-write the lead line to include "exposure."

"Risk assessment is a multidisciplinary subject requiring the identification of events (scenarios) with the potential for a failure that could lead to an undesirable outcome. A general risk assessment contains the following five components: the prediction of the source contaminants subject to release and their concentrations; the description of environmental transport; the determination of exposure pathways to assault the body; the calculation of internal and external dose; and the extrapolation of this dose to human health effects."

18 v 1, Ap H, p 2-3

Problem: The purpose of Section 2.1.2.1 entitled "Radioactive Decay and Fission" is not clear. I understand and agree with the importance of explaining radioactive decay. However, mentioning fission with regard to nuclear electric power production is inappropriate for the NTS. In addition, if the goal of this section is to explain nuclear reactions such as fission to the public, then an equally important (if not more important) reaction relevant to Radiological Effects is the fusion reaction.

Recommendation: Rename Section 2.1.2.1 "Nuclear Reactions: Radioactive Decay, Fission, and Fusion" and insert the following paragraph at page 2-3, line 22:

"Fusion is the process whereby two light nuclei, *e.g.*, a deuteron and a triton (nuclei of heavy hydrogen isotopes), collide and fuse together to form one heavier nucleus and one lighter nucleus. In the process, mass is lost and converted to energy. This nuclear reaction is the process which actually energizes the sun. The amount of energy released per pound of heavy hydrogen fusion is about four times as much as the amount of energy released per pound of uranium or plutonium fission. The large yield (greater than 100 kilotons) nuclear tests conducted at the NTS are probably based on the fusion reaction. Because tritium (a radioactive isotope) is produced in the core of the device as a fuel for the detonation, there is predicted to be large amounts of tritium left in the cavity of the large yield tests."

19 v 1, Ap H, p 2-14, li 29

Problem: Collective dose is report in units of rem.

Recommendation: Change the two occurrences of "rem" to "person-rem."

20 v 1, Ap H, p 2-16, li 24 and p 2-17, li 11

Problem: The GeoTrans (1995, a and b) references are not in the Public Reading Facility on Losee Road in N. Las Vegas, NV, as of April 17, 1996. Mary Ellen Giampaoli of the DOE has contended that the references are there. But I had this re-checked by Cynthia

ORGANIZATION 5 (CONTINUED)

Ashley (personal communication, April 17, 1996), the facility librarian, and she has confirmed that the GeoTrans (1995, a and b) references are not at the Public Reading Facility. Latonya Glass of the DOE Public Affairs Office (personal communication, April 17, 1996) is contacting GeoTrans, Inc. to resolve this problem.

Recommendation: Please provide copies of the GeoTrans (1995, a and b) references to the Harry Reid Center for Environmental Studies at UNLV as well as have them available to the public in the Public Reading Facility.

21 v 1, Ap H, p 2-16, li 30-31

Problem: Daniels *et al.* (1993) is cited but does not appear in the References on page 7-1. Daniels *et al.* (1993) did very important work that is applicable to the NTS EIS (see Comment 28, below) and possibly more applicable than GeoTrans (1995a).

Recommendation: Add the Daniels *et al.* (1993) information to the References section on page 7-1.

22 v 1, Ap H, p 2-17, li 14-16

Problem: Tritium concentrations are reported in this sentence without citing the source.

Recommendation: Cite the source of the 1 x 10^6 pCi/L tritium concentration.

23 v 1, Ap H, p 2-17, li 14-16

Problem: Tritium concentrations are assumed to be 1 x 10^6 pCi/L based on unreferenced measurements (see comment above). However, measured data from the Cambric event (Hoffman, 1977) give a measured tritium concentration of 6.1 x 10^6 pCi/L at the edge of the cavity. Cambric was a very small 0.75 kTon event. I find it hard to believe that the NTS EIS assumption of 1 x 10^6 pCi/L tritium concentration is representative of any NTS underground shot.

Recommendation: Do not assume the tritium concentration at test locations will be 1 x 10^6 pCi/L since I doubt that it will be scientifically justifiable.

24 v 1, Ap H, p 2-17, li 16-17

Problem: Calculated risks to the hypothetical member of the public at the boundary of the NTS are results of modeling which used the disputed (see above comment) 1 x 10^6 pCi/L tritium concentration.

Recommendation: Refer to Daniels *et al.* (1993) for public risks, see Comment 28, below.

ORGANIZATION 5 (CONTINUED)

25 v 1, Ap H, p 4-2, li 26-27

Problem: To state *a priori* that consumption of tritium-contaminated drinking water does not have impacts within the 10-year time frame of the NTS EIS is precarious, especially in this circumstance. Although later in the document Table 5-1 indicates that the nearest peak tritium concentration occurs at the boundary of the Central Nevada Test Area in 15 years. A look at the reference by Pohlmann *et al.* (1995), who performed the calculations, reveals that their scenario considering the highest uncertainty (*i.e.*, worst case) would occur in only 8 years.

Recommendation: Remove the following sentence from the NTS EIS because it is not factual and requires knowledge of the results of calculations which, in one instance, may not agree with the statement: "Scenario GW1 is a future scenario that does not have impacts within the 10-year time frame of this EIS."

26 v 1, Ap H, p 5-1, li 16-17

Problem: Same as above comment regarding assumption of no impact from tritium-contamination in 10-years.

Recommendation: The content of the paragraph will not be lost by removing the following sentence: "These impacts to the public are not expected to occur within the 10-year timeframe addressed in the scope of the NTS EIS."

27 v 1, Ap H, p 5-1 to 5-2

Problem: Table 5-1 does not reflect the worst case scenarios in the off-site references (*i.e.*, Shoal (Chapman *et al*., 1995) and CNTA (Pohlmann *et al*.,1995)) in which high variances and uncertainties are assumed. These values should be used to, at the very least, give the upper range of possibilities or could stand alone as the worst case scenarios.

Recommendation: Replace the off-site values in Table 5-1 with the values in the following table (note: NTS EIS values (in parenthesis) are also given below the recommended changes which are in boldface print):

ORGANIZATION 5 (CONTINUED)

Test Location	Receptor Location	Arrival Time of Peak Conc. (year)	Dose (rem)	Radiation LCF	Radiation Detriment
Project Shoal Area	Eastern Boundary	71 (206)	4 (1.6×10^{-1})	2×10^{-4} (8.0×10^{-7})	1×10^{-3} (3.7×10^{-7})
Project Shoal Area	Nearest public well	None Listed (278)	0.08 (2.0×10^{-7})	4×10^{-6} (1.0×10^{-10})	2×10^{-5} (4.6×10^{-10})
Central Nevada Test Area	CNTA Boundary	8 (15)	11 (8.0)	5×10^{-3} (4.0×10^{-7})	2×10^{-2} (1.8×10^{-6})
Central Nevada Test Area	Nearest public well	117 (410)	6×10^{-7} (1.8×10^{-20})	3×10^{-10} (9.0×10^{-24})	1×10^{-9} (4.1×10^{-23})

Recommendation: I also recommend reporting the risk values with only one significant figure to emphasize that order of magnitude is the most reliance that can be placed on their determination.

28 v 1, Ap. H, p 5-1, li 23-27

Problem: The migration of tritium-contaminated groundwater from Yucca Flat to Mercury does not even closely approximate the maximum health risks to a public individual from underground testing within the NTS boundaries. Since the reference which contains the calculations is currently not available in the Public Reading Facility (see Comment 20, above), I could not determine the reason other federal reports were neglected such as the LLNL report by Daniels, J. I., editor, *et al*., "Pilot Study Risk Assessment for Selected Problems at the Nevada Test Site," UCRL-LR-113891, Lawrence Livermore National Laboratory, June, 1993, which estimates the dose at the boundary of Area 20 to a member of the public drinking the tritium-contaminated water as 14 rem (not only is this dose nine orders of magnitude different from the NTS EIS values, but it is also above compliance levels). In addition, the dose to the nearest residential community, Oasis Valley, had a dose of 0.008 rem. This value is still five orders of magnitude higher than the NTS EIS dose at Mercury although probably within safe standards.

Recommendation: Use federally sponsored studies containing worst case scenarios of tritium-contamination to members of the public. These scenarios (*e.g.*, Pahute Mesa to Oasis Valley) are probably not those analyzing migration from Yucca Flat to the boundary near Mercury, NV, as given in the NTS EIS.

ORGANIZATION 5 (CONTINUED)

29 v 1, Ap H, p 5-1, li 25-29

Problem: The EPA's Clean Drinking Water Act sets the level of tritium in "clean" water at 20,000 pCi/L. In addition, tritium exists in the NTS groundwater due to natural causes at levels which are easily detectable (on the order of 10s of pCi/L). Thus, to give risk numbers for a clearly *de minimus* tritium concentration (the value is actually never given in the NTS EIS but is inferred to be less than 1 pCi/L) leads to insignificant risks such as 1.5×10^{-11}. This risk value assumes a Linear, No-Threshold Dose-Response Curve which is not uniformly accepted in the scientific community. For example, since insufficient epidemiological data exists to say anything about health risk at doses below 5 rem/yr or lifetime dose below 10 rem, some subscribe to a threshold limit. Currently, a range of risks which include the likely possibility of zero adverse health effects is proposed by the Health Physics Society.

Recommendation: If the Yucca Flats to Mercury scenario is chosen to estimate risk to members of the public, it could be dismissed as below some screening level, even if that screening level is 0.0001 of the EPA's "clean" water standard.

30 v 1, Ap H, p 5-3, li 3-8

Problem: A tritium concentration of 280 pCi/L is still below the screening level I propose.

Recommendation: If such a low concentration is to be considered, it should at least give a range for risk which includes the likely possibility of zero adverse health effects.

31 v 1, Ap H, p 5-3, li 8-12

Problem: The NTS EIS is again considering tritium concentrations below 1 pCi/L.

Recommendation: Same as Comment 29, above.

32 v 1, Ap H, p 5-3, li 17-22

Problem: The NTS EIS is again considering tritium concentrations below 1 pCi/L.

Recommendation: Same as Comment 29, above.

33 v 1, Ap H, p 5-3, li 29-31

Problem: Radioactive decay should be properly considered to give the calculation scientific validity. This is important because the tritium concentration (120 million pCi/L) in this case is significant and well above compliance standards even when decay is considered.

ORGANIZATION 5 (CONTINUED)

Recommendation: Adjust the concentration and risk values to include radioactive decay

34 v 1, Ap H, p 5-4, li 31-33

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

Recommendation: Age effects and nuances in calculating committed dose should justify looking at the workers' lifetime dose, not just a 10-year block. Consider radiation exposure over the entire work period of the population (as the 50-years for the Maximum Reasonably Foreseeable Accident scenario in the NTS EIS, volume 1, appendix H, page 5-8, line 7), not simply over the 10-year scope of the NTS EIS.

35 v 1, Ap H, p 5-5, li 15-17

Problem: The worker population radiation dose is considered over 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

36 v 1, Ap H, p 5-5, li 29-31

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

37 v 1, Ap H, p 5-6, li 28-30

Problem: The worker population radiation dose is considered over a 10-year period although workers actually could work up to around 40 years.

Recommendation: Same as Comment 34, above.

38 v 1, Ap H, p 5-8, li 6

Problem: A total lifetime dose of 281 rem is large and within the slope of the acute 10 rem on which the National Research Councils BEIR V (1990) and the International Commission on Radiological Protection (1991) base the risk slope factor used in the NTS EIS. I believe the Dose-rate effectiveness factors for radiation at low dose rates (Φ_i and Φ_d on page B-3) were inappropriately invoked in these instances.

Recommendation: Check the calculations and do not use the Dose-rate effectiveness factors for radiation at low dose rates which effectively increases the risks by a factor of 2.

ORGANIZATION 5 (CONTINUED)

39 v 1, Ap H, p 6-1, li 21-22

Problem: The concept of probability is misstated. A probability of 1.0 means that it will definitely happen. A probability of 0.5 means that there is a 50-50 chance of occurrence. A probability between 0.5 and 1.0 I would consider "likely." It is not true to infer that a probability of less than 1.0 is "unlikely."

Recommendation: Remove the concept of probability by deleting the following sentence: "In other words, for each NTS EIS alternative, the probability that a single radiation-induced or chemical-induced health effect will occur in the worker population is less than 1.0." And simply state that "it is unlikely that any workers will contract fatal cancer or other detrimental health effects as a result of exposure to radiation . . ."

40 v 1, Ap H, p 6-1, li 30-32

Problem: The statement that "subsurface migration of tritium in groundwater is not expected to result in measurable tritium concentrations at existing public wells at any time in the future," was contested in Comments 12 and 28, above.

Recommendation: Resolve the issue which may mean changing the conclusion in this statement.

41 v 1, Ap H, p B-3, li 14-15

Problem: I believe the Dose-rate effectiveness factor for radiation latent cancer fatality at low dose rates is incorrectly quoted as 2.5. ICRP (1991, p 112) "has decided to recommend that for radiation protection purposes the value 2 be used for the DDREF" (Dose and Dose Rate Effectiveness Factor for low LET radiation). The factor of 2 is also found in the Federal Register (page 23363, 1991).

Recommendation: I believe the incorrect factor was never actually used in calculations, but this should be double-checked as well as the factor for radiation detriment (Φ_d) which I could not find in ICRP (1991).

42 v 1, Ap H, p C-21, li 1-11

Problem: Table C-34 reports insignificant and meaningless values. The public has no comprehension for these values and the doses for such risk are well under safe limits.

Recommendation: Place values for concentration and dose next to safe and EPA clean standards to give the public an intuitive feel for the insignificance of these risks.

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Department of Energy
Washington, DC 20585

Mr. W. B. Andrews
Harry Reid Center for Environmental Studies
4505 Maryland Parkway
Box 456009
Las Vegas, Nevada 89154-4009

Dear Mr. Andrews:

When you met with Acting Under Secretary Grumbly and me on April 3, 1996, you discussed an issue with regard to the Environmental Impact Statement (EIS) for the Nevada Test Site (NTS) and Off-site Locations in the State of Nevada, which is being prepared by the Office of Defense Programs (DP) with the cooperation of several other Department of Energy (DOE) offices. Because DP is the lead office for the EIS, I told Mr. Grumbly that I would respond to your comments regarding the calculation of the soil burden of radiation that resulted from the underground nuclear tests conducted at the Nevada Test Site.

You commented that Mr. Anthony Hechanova had not been able to get enough information from the DOE to confirm the results of work on a doctoral thesis. We contacted personnel of the Nevada Operations Office, but have not been able to verify who has been contacted by Mr. Hechanova.

With regard to an evaluation of the calculations by DOE, we have not conducted an evaluation, as no one we contacted at the Nevada Operations Office has seen the model which led to the calculations nor the calculated results.

DOE's current analysis regarding the radiologic inventory is in the draft EIS, which has been with the public since February 2, 1996. Specific references of interest to you would be: pages 4-3 thru 4-9, paragraph 4.1.1, Land Use; pages 4-100 thru 4-111, para. 4.1.4.2, Geology; and pages 4-159 thru 4-163, RADIOLOGIC SOURCES IN GROUNDWATER.

I am aware of your organization's work with studies for the transportation of low level waste for the EIS. We would like to pursue the issues you raised to ensure that the EIS is as accurate as possible. We are reviewing and incorporating comments and questions from the public until May 3, 1996, but to date we have no

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record of having received comments from you or Mr. Hechanova. Please contact Dr. Donald R. Elle, the Program Manager for the NTS EIS, at 702-295-5844 to further discuss the issues you raised.

Sincerely,

David B. Leclaire
Deputy Assistant Secretary
for Program Support
Defense Programs

cc: T. Grumbly, US
Mary Manning, Las Vegas Sun

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

April 18, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Dear Dr. Elle:

Attached are my comments on the Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (NTS EIS). I am a Nevada Risk Assessment/Management (NRAMP) Technical Team member and therefore have a background relating to many of the issues addressed in the NTS EIS. Specifically, my focus in reviewing the document was on the topic of groundwater contamination.

I have included both general comments and page-specific comments. All comments have corresponding recommendations. I believe the recommendations will make the document a more appropriate communication tool. Many of the comments relate to specific points which I believe need to be addressed in order to produce a final product which is an honest portrayal of the site and potential future use.

Sincerely,

Tod E. Johnson
Environmental Modeling
Nevada Risk Assessment/Management Program

cc: W.B. Andrews
Nevada Test Site Citizen Advisory Board

Harry Reid Center for Environmental Studies
4505 Maryland Parkway • Box 454009 • Las Vegas, Nevada 89154-4009
(702) 895-3360 • Telex 6748184 UNLV/MSM • FAX (702) 895-3094

Comments on the Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada: Volume 1, Appendix H, "Human Health Risks and Safety Impacts Study" and Selected Groundwater-Related Sections in Other the NTS EIS Volumes.

April 1996

Tod Johnson, Environmental Modeling
Nevada Risk Assessment/Management Program
Harry Reid Center for Environmental Studies
Box 454009
4505 Maryland Parkway
Las Vegas, NV 89154-4009

GENERAL COMMENTS:

G-1
Problem: One of the Land Use Alternatives listed in the EIS involves turning back some of the land (70%) to public lands inventory. As such, the evaluation of the risks to the public should have included estimation of risk at the potential new boundaries. Vol. 1, 3-27 states that return of the land would be evaluated, but only to the US Bureau of Land Management (BLM) for public use (not directly to the public, the State, Nye County or to the sovereign nations). Because it would be available for public use, even under the control of the BLM, many exposure scenarios impacting the public should have been considered.

> **Recommendation:** The exposure scenarios should include the ingestion of drinking water by casual/recreational public visitors to the area and include worker risk scenarios consistent with relatively remote locations (i.e. partial residence time on the site).

G-2
Problem: Modeling shows that contaminants from underground testing are likely off the NTS and CNTA, and likely will be off the Shoal Site in the future. This understanding is not reflected in the document. Also, because site characterization is quite limited, the risk results are quite uncertain. This understanding is not reflected in the EIS. The predicted concentrations, locations, duration and potential hazards must be included because no intervention is described.

> **Recommendation 1**: The Draft NTS should be revised to remove conflicting sections and misleading statements which imply the underground contamination is not leaving the site.
>
> **Recommendation 2**: The document should also be revised to include honest, clear discussion of the uncertainties.

> **Recommendation 3**: Because of the large uncertainties inherent in the modeling, the worst case analyses should be presented, not the least-conservative.

PAGE-SPECIFIC COMMENTS:

Draft NTS EIS Summary

S-1 EIS Summary, Page S-19, lines 11-13:
Problem: The text states that groundwater models suggest there will be no migration out of the NTS boundaries. That statement is in conflict with modeling from other sources (Daniels et al., 1993, Andricevic et al., 1994). Modeling in those sources indicated migration was possible, and estimate the risks related to the transport. The risk values correspond to tritium concentrations greater than detection limit (1 pCi/L) and greater than background (approx. 10 pCi/L). Also, some of the locations for which modeling was conducted (NTS EIS Human Health Risk and Safety Impacts Study, Vol. 1, Appen. A, page 2-17, lines 11-14) do not have corresponding results listed in the EIS. Therefore, one cannot test the "no migration off site" statement for those locations.

> **Recommendation**: Delete the "no migration" expected statement. Say instead that modeling does indicate migration off the site sometime in the future.

S-2 EIS Summary, Page S-19, lines 15-18:
Problem: The text implies that groundwater contamination will never be a problem simply because no contamination has been detected in off site monitoring wells. That is a poor argument for several reasons. First, the contamination could move off site in narrow plumes and miss the monitoring wells. Second, the contamination may be moving toward the wells, but not have reached it yet. Third, the modeling report for the area (Chapman et al., 1995) indicates contamination will likely move off the site sometime in the future. If the conservative estimate in the report is used (which includes limits of uncertainty in some of the parameters), a concentration of 720,000 pCi/L could occur at the boundary.

> **Recommendation**: Add text to indicate that the groundwater modeling indicates movement off the site could occur sometime in the future.

S-3 EIS Summary, Page S-19, lines 20-27:
Problem: The text implies no contamination has left or will leave the CNTA from underground sources. This does not match the conclusion from results presented in the NTS EIS Human Health Risks and Safety Impacts Study (Vol. 1, Appen. A, page 2-17, lines 22-26). The specific discussion of the CNTA modeling describes concentrations as high as 1.2×10^6 pCi/L at the boundary. There is no existing well at the location, but the text in the Summary is written in such a way as to imply there is no release beyond the site boundary. It states that "transport could already be occurring",

which does not clearly communicate the relevant detail that contamination has likely already left the site.

> **Recommendation:** Modify text to include the statement: "Ground water modeling has indicated contamination has likely left the site boundary, but has not been identified in any existing well."

Volume 1, Appendix H, "Human Health Risks and Safety Impacts Study"

S-4 Page ES-2, Lines 4-7:
Problem: The sentence states that tritium is never expected to exceed measurable concentrations at the site boundaries of the NTS and Shoal. However, on page S-1, the report states the detection limit is 1 pCi/L. On the same page (S-1), the report states an estimate of 280 pCi/L at the boundary some time in the future. Therefore, tritium is expected to leave the NTS and Project Shoal boundaries in measurable concentrations in the future.

> **Recommendation:** The text on page ES-2 should be corrected to state that contaminants are expected leave the site boundaries at every site (not just the CNTA).

S-5 Page 2-17, lines 15-16:
Problem: The information describing the method of calculation of the NTS tritium source is poorly described in the EIS and may be incorrect. The text indicates the concentrations used for model inputs came from direct measurements from shot cavities. This does not appear to be the case. NRAMP has a version of the results and code from the program listed in the EIS. The description listed does not indicate the values came direct measurement. Rather, the actual method used appears to combine classified information regarding cavity volume with averages of recently declassified tritium estimates. The assumption appears to be that the tritium is, on average, distributed within a volume of water approximately equal to the sum of the shot cavities. The merits of the assumption can be debated, but only if the method is described to the public in the EIS document. I believe the public should not be led to think the data came from site-specific measurements (which may or may not exist, but which do not appear to have been used in the calculation of results).

> **Recommendation 1:** Briefly describe the method used to calculate the concentrations, so the public is more clear about the uncertainties of the estimate. (The method used to calculate the concentrations is not classified.)

> **Recommendation 2:** Briefly list which shot(s) was (were) chosen for the modeling. Was the shot closest to the boundary-of-concern used? Or was one that was considered by the DOE to be representative in yield and location used?

S-6 Page 2-17, lines 11-14:
Problem: The EIS states the MC_TRANS code was used to simulate the movement of tritium from test locations on Pahute Mesa and Yucca Flat to downstream locations within the NTS, to the towns of Beatty and Lathrop Wells, and to the boundary of the NTS south of Mercury, Nevada. Where are the results for the locations within the NTS boundaries? Where are the results for the towns of Beatty and Lathrop Wells? It seems that the only result listed is for a distant, unlikely location.

> **Recommendation**: The results of the other locations should be presented for completeness and honesty (the locations listed could have higher risk values than the single NTS location listed in the EIS).

S-7 Page 2-17, lines 11-14:
Problem: Not all of the relevant risk calculations have been presented. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which is 19 km downgradient. The risks were estimated to be as high as 2×10^{-4} at the boundary and 1.4×10^{-5} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

> **Recommendation**: Include the Oasis Valley in list of locations that have completed calculations. (The high estimate of risk at the boundary does not need to be included in this EIS, because it appears to be US Air Force-controlled property adjacent to the NTS at that point, and is therefore still under administrative control for the near-future. And the EIS is not considering US Air Force property to be available for public access in the scope of the EIS.)

S-8 Page 2-17, lines 16 and 17:
Problem: Regarding the risk calculations for the NTS boundaries, the equations listed in Attachment A may or may not be the equations used to calculate the values, but are incomplete if the groundwater flow and contaminant transport parameters are not available for review. (The document describing the results has apparently not been made available to the public or evaluating groups such as NRAMP.) Therefore, the equations listed in Attachment A are of limited value.

> **Recommendation 1:** Release the document containing the data and results for the MC_TRANS modeling. (The transport calculations are not likely classified, nor is the model treatment of the source term.) The equations do not appear to have been used for the offsite locations (Shoal and CNTA).

> **Recommendation 2**: If Recommendation 1 cannot be followed because the modeling report is not finished, then the EIS results should be listed as interim results.

ORGANIZATION 5 (CONTINUED)

Recommendation 3: If Recommendation 2 cannot be followed, do not cite the equations likely used -- the public cannot test their application or relevance.

S-9 Page 2-17, lines 23-29:
Problem: The equations (or even summation of the method) used for calculating the risks at the off-site locations (within the Solute Flux method) are not listed in the EIS document. An approach using an age-specific intake distribution, time-dependant tritium concentrations, and age-dependent health effects was used.

Recommendation: The method should be described (briefly) or is should not be used to calculate the values. If the risk calculation method within the Solute Flux method) is not to be used, the more simple equations listed in back of the EIS would have to be used, causing new results.

S-10 Page 5-1, Lines 15-16:
Problem: The risk assessment for scenarios involving ingestion of water are said to be identical for each alternative. As stated in comment G-1, above, Land Use Alternative 4 involves turning back some of the land (70%) to public lands inventory. Therefore, the land uses are not sufficiently similar to do only one water ingestion scenario that would be applicable to all.

Recommendation: The evaluation of the risks to the public should be corrected to include estimation of risk at the potential new boundaries for Alternative 4.

S-11 Page 5-2, Table 5-1:
Problem: The report lists a table of health risks to individuals, summarizing work from several different reports.

Recommendation: Looking at the original texts, the risks included in EIS work were the minimum of a variety of scenarios listed in the original texts. The values in the original text include reasonable (according to the authors of the texts) inclusion of uncertainty. Uncertainties which were in the original texts include uncertainties in the mean velocity of the groundwater and greater areal variation in hydraulic conductivity. In some of the cases, the risk including the higher uncertainties is still de minimus (less than 10^{-6}). In other cases, such as Project Shoal, the risks increase from a de minimus level to levels that have, for other sites, been considered significant. I recommend changing Table 5-1 to include the more conservative values listed in my attached table.

S-12 Page 5-2, Table 5-1:
Problem: The report lists a table of health risks to individuals, summarizing work from several different reports. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which

ORGANIZATION 5 (CONTINUED)

is 19 km downgradient. The risks were estimated to be as high as 2×10^{-2} at the boundary and 1.4×10^{-5} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

Recommendation: Include the value for the risk to residents near the Oasis Valley in Table 5-1. (The high estimate of risk at the boundary does not need to be included in this EIS, because it appears to be US Air Force-controlled property adjacent to the NTS at that point, and is therefore still under administrative control for the near-future. And the EIS is not considering US Air Force property to be available for public access in the scope of the EIS.)

S-13 Page 5-3, lines 8-9:
Problem: Regarding concentrations and arrival times listed in the EIS text for Project Shoal, the values increase when uncertainty (listed in the source document, Chapman et al., 1995) is included. For the Project Shoal Area, if listed uncertainties are included, the peak tritium concentrations in the groundwater could be as high as 720,000 pCi/L, arriving 71 years after the test. The number cited in the EIS is 280 pCi/L at 206 years.

Recommendation: Correct the text to include the values resulting from the higher levels of uncertainty.

S-14 Page 5-1, lines 25-26:
Problem: The evaluation of the risk calculations of the NTS boundary near Mercury is more difficult to conduct than for the offsites (Shoal and CNTA), because the report referenced for the results is apparently not publicly available. NRAMP has a version of the results and code from the program listed in the EIS, but the calculation included in the EIS is not given in the documentation available to NRAMP. From initial calculations conducted by NRAMP, it is unlikely that there is substantial risk at the boundary near Mercury. However, other boundary locations may be more appropriate to list in the EIS. For instance, the boundary near Pahute Mesa has shot locations much closer to the boundary and has hydraulic gradients which could move the contaminants past the boundary. A risk estimate was conducted for the NTS using the Solute Flux method, the same as was used for Project Shoal and the CNTA. The study (Daniels et al., 1993 and Andricevic et al., 1994) estimated the risk at the boundary near Pahute Mesa and at the nearest accessible environment, the Oasis Valley, which is 19 km downgradient. The risks were estimated to be as high as 2×10^{-2} at the boundary and 1.4×10^{-5} at the Oasis Valley. Those risks are significant relative to a de minimus level and are quite high relative to the value used in the EIS (1.5×10^{-11} at the boundary near Mercury).

Recommendation 1: Provide more of the framework for the parameters and calculations used to produce the Mercury boundary number.

Recommendation 2: Include the Pahute Mesa to Oasis Valley results in discussion.

ORGANIZATION 5 (CONTINUED)

Table 1. Considering Limits of Uncertainties in Original Documents

Test Location	Receptor Location	Arrival Time of Peak Concentration (yr)	Dose (rem)	Radiation LCF	Radiation Detriment
Yucca Flat	Mercury	• (EIS: 100)	• (EIS: 3.0×10^{-6})	• (EIS: 1.5×10^{-11})	• (EIS: 7.0×10^{-12})
Project Shoal Area	Eastern Boundary	71 (EIS: 236)	4 (EIS: 1.6×10^{-5})	2×10^{-3} (EIS: 8.0×10^{-7})	9.2×10^{-4} (EIS: 3.7×10^{-7})
Project Shoal Area	Nearest Public Well	** (EIS: 276)	0.08 (EIS: 2.0×10^{-7})	4×10^{-5} (EIS: 1.0×10^{-10})	1.8×10^{-5} (EIS: 4.6×10^{-11})
Central Nevada Test Area	Central Nevada Test Area Boundary	8 (EIS: 15)	11 (EIS: 8.0)	5.3×10^{-3} (EIS: 4.0×10^{-3})	2.4×10^{-3} (EIS: 1.8×10^{-3})
Central Nevada Test Area	Nearest Public Well	117 (EIS: 410)	6×10^{-7} (EIS: 1.8×10^{-33})	3.2×10^{-10} (EIS: 9.0×10^{-34})	1.5×10^{-10} (EIS: 4.1×10^{-34})

• Original documentation not available
** Not listed in original document

6

ORGANIZATION 5 (CONTINUED)

REFERENCES
Andricevic, R., Daniels, J.I. and Jacobson, R.L., 1994. "Radionuclide migration using a travel time transport approach and its application in risk analysis." J. of Hydrology, Vol. 163, pp. 125-145.

Daniels, J.I., Andricevic, R. Anspaugh, L.R. and Jacobson, R.L., 1993. "Risk-based screening analysis of ground water contaminated by radionuclides introduced at the Nevada Test Site (NTS)." Tech. Rep. UCRL-ID-112788. Lawrence Livermore National Laboratory, Livermore, CA.

7

ORGANIZATION 6

NTS DEVELOPMENT CORPORATION

April 24, 1996

Donald R. Ellis, Director
Environmental Protection Division
U.S. Department of Energy Nevada
P. O. Box 14459
Las Vegas, NV 89114

Dear Mr. Ellis:

As the DOE-designated Community Reuse Organization for the Test Site, NTS Development Corporation's (NTSDC) mission is to increase economic activity at the Test Site which will benefit both the public and private sectors. To achieve this, the non-profit, community-based organization is working closely with the Department of Energy and its management and operations contractor to create opportunities for commercial development at the site. The goal is twofold: 1) to protect the long-term interests of the community by enhancing future options for the work force, and 2) to maximize utilization of government resources and facilities which have been affected by budget reductions.

The commercial development referenced above could include business relocations to the Test Site to take advantage of excess federal facilities, equipment and expertise. Other enterprises might construct new facilities at the Test Site because they require the Test Site's unique space advantages for the testing and manufacturing of new technologies and products.

At this time it is impossible to predict the exact nature of all of the commercial ventures which could occur at the site. However, the testing, development, and manufacturing of new rocket designs and vehicle safety devices are two industries already being considered. Mining, commercial tours, and an enterprise which would utilize the spill test facility are others.

Regardless of the various potential scenarios, NTSDC's work will be directly affected by many of the resource management decisions which could result from the draft January 1996 Environmental Impact Statement being proposed at this time. We're attaching our comments for your review.

Thank you for this opportunity.

Sincerely,

Tim Carlson, President

2340 Paseo Del Prado, Suite D-108, Las Vegas, Nevada 89102
Telephone (702) 257-7900 Fax (702) 257-7999

ORGANIZATION 6 (CONTINUED)

NTS DEVELOPMENT CORPORATION

The attached comments are offered in response to the draft Nevada Test Site Environmental Impact Statement, dated January 1996.

EXPANDED USE OF THE NEVADA TEST SITE: "NONDEFENSE RESEARCH AND DEVELOPMENT"

A. REQUEST RESTRICTIVE LANGUAGE BE MODIFIED

Within the above category, restrictive EIS language used to describe potential projects may create barriers to the community's efforts to develop expanded opportunities at the Test Site. If so, the language would thwart DOE's desire to maximize utilization of Test Site resources to stimulate the regional economy. It would also limit the NTS Development Corporation's ability to facilitate business ventures for the commercial application of current and future technologies.

1 We request DOE modify the EIS references to potential projects wherever that language is so narrowly constructed that it could preclude all but a single or very few possibilities.

Examples of restrictive references:

> In the description of Alternative 3, Expanded Use (Vol 1, Chapter 3, pages 15-16), the language describing new initiative possibilities is as follows:
>
> "New initiatives would include constructing and operating a solar-energy production facility and siting an alternative vehicle fuels demonstration project at the NTS. Alternative 3 would also permit the public and private institutions to use the NTS for the purpose of developing new environmental remediation technologies in conjunction with ongoing Environmental Restoration Program activities.
>
> ...abundant data...supports the choice of the NTS as a viable and attractive location for measuring the success or failure of new technologies for remediation of radioactively contaminated areas... The Nondefense Research and Development Program operations and activities at the NTS that would be pursued under Alternative 3 are as follows:
>
> -- Expanding activities at the Spill Test Facility in Area 5
> -- Developing and testing new remediation technology
> -- Developing and constructing a solar-energy power-generation facility."

By limiting what new initiatives would be included under Alternative 3, and by specifying that public or private "institutions" pursuing only one kind of technology development (environmental remediation technology) would be "permitted" under this Alternative, the EIS may be drastically circumscribing the development potential. The implication is that other initiatives could not be included and business ventures sponsored by non-institutions would not be permitted under Alternative 3.

This implication, if unintended, could be changed simply by adding words which indicate the itemized activities are being used as examples of the types of activities which could be included under Alternative 3. The reference to "institutions" could be changed to "entities", and the reference to environmental remediation technology could be clarified as intended only as an example of various types of technology development which would be permitted at the Test Site. Expressions like "could include but not be limited to," and "such as" would make it clear that the EIS was not intended to preclude consideration of a wide variety of initiatives.

2

ORGANIZATION 6 (CONTINUED)

B. IS THE OMISSION OF MINING AS AN EXAMPLE OF EXPANDED USE AN OVERSIGHT?

2 | UNDER ALTERNATIVE 4, the nonmilitary research and development program activities referenced are limited to those which were mentioned in Alternative 3. Mining was not mentioned as a possibility in Alternative 3. Is this omission intended to preclude mining as one of the alternate uses of NTS land?

3 | Also, although Alternative 4 discusses the possibility that some NTS lands could be relinquished to the U.S. Bureau of Land Management, the potential uses of these relinquished lands are listed as public education and recreation. Mining is again not mentioned as a potential use. Are public education and recreation being used only as examples, thereby allowing consideration of mining as a potential use? Or, is mining precluded because it is not mentioned?

Figure 3-4, Volume 1, Chapter 3, page 24, identifies the potential Turn Back Area (land which could be relinquished to the BLM) and the accompanying narrative references the area as designated for potential public education, recreation, and use. Would mining be a possibility under the "and use?"

4 | If mining is being considered or anticipated as a potential use, why is there no provision in the EIS for opening the potential turn back area for exploration? This would have to come first, to determine the probability of the kinds and quantities of minerals in the area.

C. SUPPORT ALTERNATIVE 3

In reference to the Summary Comparison of Environmental Impacts of the Alternatives (Volume 1, Chapter 3, Table 3-5), NTS Development Corporation supports Alternative 3. It is the only one which projects a positive influence on the socioeconomics of the region.

3

ORGANIZATION 7

Campaign for Nevada's Future

May 3, 1996

Dr. Don Elle
Nevada Operations
Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle,

This letter is a transmittal of the comments of Campaign for Nevada's Future on the Draft Environmental Impact Statement (DEIS) for the Nevada Test Site.

- The DEIS's numerous technical deficiencies need to be corrected prior to a Final EIS being issued.

1 | Specifically on page 4-110 the decay of tritium is far slower than the figures suggest. Calculated according to generally accepted half-life of 12.3 years, there should be approximately 80% curies of the original tritium concentration left after five years. The document suggests that only 21% was remaining. Has any empirical data been collected to support the estimate in the document? If so,
2 | have groundwater transport studies been done in this area to determine how far and in which direction the missing tritium has migrated?

3 | On page 5-59 the document reports on a tritium contaminated groundwater transport scenario which is focused on radiation released at Yucca Flat. Paiute Mesa is far closer to inhabited areas offsite than Yucca Flat. The scenario in the document should focus on the closest possible exposed population, not one of the furthest. Specifically, the report, "*Risk-based screening analysis of ground water contaminated by radionuclides introduced at the Nevada Test Site*," by Daniels et al from LLNL and DRI suggest that radioactively contaminated water will migrate to Oasis Valley.

4 | In addition, the Final EIS should seek to model the effects of groundwater pumping which were observed at the tunnel complex in the last several years of nuclear testing. The monitoring of groundwater discharge from the tunnels complexes showed clear spikes from one to two days after each test. It appears that the seismic pulses from the detonations were pushing contaminants along the flow paths at greater volumes than normal groundwater flow. This suggests that more aggressive monitoring around test cavities in tuffaceous rocks may be prudent, as the contaminants may have migrated further than steady state flow models suggest.

ORGANIZATION 7 (CONTINUED)

5 • All data regarding contamination should be declassified. The public has a right to know about potential hazards. The examples cited above are sufficient to show that the EIS will be suspect unless the public can verify for themselves the conclusions in the document through independent analysis of the data.

6 • CNF urges the DOE to determine a preferred alternative which:

a) Supports solar energy on the NTS
b) accelerates environmental restoration
c) limits waste management activities to the waste already on-site, and that which will be generated through on-site ER.
d) closes all parts of the NTS dedicated to building weapons of mass destruction, including but not limited to nuclear weapons.
e) turns back uncontaminated lands to the Western Shoshone and Paiute Tribes among whose members are the descendants of the indigenous population.

7 CNF believes that a six month comment period is more appropriate for a document of the size and complexity of the DEIS and suggests the DOE extend the comment period appropriately.

8 We may submit additional comments in the future, and would like them considered with the same weight as the enclosed and our hearing testimony.

Sincerely yours,

Chris Brown
Director

PO Box 60391 Las Vegas NV 89160

ORGANIZATION 8

5-03-1998 5:08PM FROM NRDC WASHINGTON 202 783 5917 P.2

Natural Resources Defense Council

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Comments of the

Natural Resources Defense Council

on the

Draft Environmental Impact Statement

for the Nevada Test Site

Barbara A. Finamore
Attorney for NRDC

Christopher E. Paine
Senior Research Associate

ORGANIZATION 8 (CONTINUED)

5-03-1996 5:05PM FROM NRDC WASHINGTON 202 783 5917 P.2

1350 New York Ave., N.W.
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Fax 202 783-5917

May 3, 1996

Donald R. Elle
Director
Environmental Protection Division
U.S. Department of Energy
Post Office Box 14459
Las Vegas, Nevada 89114

Fax: (702) 295-1264

Dear Mr. Elle:

The Natural Resources Defense Council, Inc. ("NRDC") submits the following comments on the Department of Energy ("DOE" or the "Department") Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (the "Draft EIS" or "sitewide EIS").

Recognizing the need to evaluate the environmental risks and impacts of the DOE nuclear weapons complex on a comprehensive and ongoing basis, the Department's National Environmental Protection Act ("NEPA") implementing regulations require DOE to prepare sitewide environmental impact statements for certain large, multiple-facility DOE sites, and to evaluate these EISs at least every five years to determine whether supplementation or a new EIS is required. 10 C.F.R. § 1021.330. Since publication of the last sitewide EIS for the Nevada Test Site ("NTS") in 1977, tremendous changes have occurred with respect to U.S. national security policies for nuclear deterrence, arms control and nuclear proliferation. These changes have called into question the very purpose and need for the NTS once its primary mission, that of conducting underground nuclear weapons tests, was suspended by moratorium beginning in 1992, pending completion of negotiations on a permanent comprehensive test ban treaty expected to be completed this year.

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ORGANIZATION 8 (CONTINUED)

5-03-1996 5:27PM FROM NRDC WASHINGTON 202 783 5917 P.4

The Draft EIS should be viewed as a meaningful opportunity for the Department to explore alternative uses of the Site in keeping with the nation's post-Cold War objectives. The Draft EIS does take advantage of this opportunity in many respects, evaluating such alternatives as the demonstration and testing of new environmental remediation technologies. Yet apparently under the guise of "continuing current operations" and behind a veil of secrecy that it has already deliberately lifted, the Department has shielded from public review and comment a proposal for major Federal action posing significant environmental and nonproliferation risks: that of conducting subcritical nuclear experiments at NTS.

On October 27, 1996, DOE issued a press release announcing a decision by the Secretary to conduct a series of subcritical high-explosive experiments with nuclear materials at the Nevada Test Site (Attachment 1). The Secretary characterized this decision as "redirecting the work at Nevada to support a 'zero yield' Comprehensive Test Ban Treaty" (emphasis added). The press release and associated fact sheets (Attachment 2) emphasized the differences between previous underground nuclear tests and the subcritical experiments with respect to their purpose, location, configurations, and results. The subcritical experiments would be conducted at the LYNER ("Low Yield Nuclear Explosive Research") site at NTS, at a new tunnel complex, the mining of which commenced in March 1995. Id. No subcritical tests have apparently ever been conducted at that location, although a high explosive experiment using no nuclear materials took place there in March 1995 in preparation for the subcritical experiments.

Although DOE explained that the actual configurations of the explosive devices to be used are classified, since they relate to nuclear weapons technology, it described the experiments in detail and stressed the transparency of its operations. Among other things, DOE stated that the news media will be allowed to visit the LYNER complex one to two

weeks prior to the experiment to view preparations, and will be permitted at the Test Site when the experiments are conducted (Attachment 2). DOE has produced detailed unclassified descriptions, including diagrams of the LYNER complex, the experimental package and the experimental layout. (See, e.g., Attachment 3). DOE has also expressly considered the option of allowing foreign governmental access to the LYNER complex in connection with these tests. Id.

Further details of the tests were also provided to a concerned citizen in November, 1995, who noted in a letter to NRDC:

> Previous tests of this sort were conducted 20 to 30 meters below the ground surface at the NTS and at Los Alamos, resulting in unsolvable contamination problems. During the 1950s, some so-called "safety" test[s] were conducted on the surface, at and near the NTS, resulting in wide-spread Pu-239 contamination surrounding the test locations. Plans, to deal with these contamination problems, are still being debated.

(Attachment 4). Although the new subcritical nuclear weapons experiments would be conducted approximately 970 feet deep, DOE admitted that the experiments could still result in a release of radioactive and toxic materials into the environment, but described elaborate safeguards that it plans to implement in order to reduce the risk to the health and safety of the public and Test Site workers (Attachments 1-3).

In its October press release, DOE announced that the first two subcritical experiments were planned for mid-June and mid-September 1996, and that four additional experiments were planned for Fiscal Year 1997. More recently, however, DOE has reportedly decided to postpone the start of these experiments, apparently pending the completion of the Stockpile Stewardship and Management PEIS.

The Secretary's announcement of planned subcritical nuclear weapons experiments at NTS occurred several months before DOE published the Draft NTS environmental impact statement. Yet we have found only passing reference to these experiments in the multi-volume Draft EIS, and can only speculate as to DOE's reasons for failing to include a detailed analysis. Apart from simple oversight, possible justifications appear to include the following: (1) these subcritical experiments are part of the "continued current operations" at NTS and therefore merit no detailed analysis, particularly of purpose, need or alternatives; (2) any discussion or analysis of such experiments belongs in a classified appendix to the Draft EIS rather than the unclassified body of the text; (3) the subcritical nuclear weapons experiments are an independent "interim action" under NEPA that may proceed before completion of the NTS EIS (or the programmatic EIS on Stockpile Stewardship and Management ("SSM")) on the basis of the 1977 sitewide EIS; or (4) the subcritical nuclear weapons experiments have been or will be discussed adequately in the programmatic SSM EIS.

As discussed below, none of these arguments provides a legally supportable basis for DOE's failure to include a detailed analysis of the subcritical experiments in the Draft EIS, using available unclassified information. Specifically, these arguments do not justify DOE's failure to evaluate in the Draft EIS the purpose and need for these experiments and their potentially significant impacts, particular with respect to U.S. nuclear nonproliferation goals. Nor do they excuse DOE's failure to rigorously explore and objectively evaluate all reasonable alternatives to these experiments in either the Draft EIS or, more appropriately, the draft programmatic EIS for the Stockpile Stewardship and Management Program.[1] Since both documents are so inadequate in these respects as to

[1] NRDC hereby incorporates by reference as related comments on the Draft Programmatic Environmental Impact Statement on the Stockpile Stewardship and Management Program, which will be submitted to DOE on or before May 7, 1996.

ORGANIZATION 8 (CONTINUED)

preclude meaningful analysis, DOE must prepare and circulate revised draft EISs that analyze the subcritical nuclear weapons experiments in accordance with the requirements of NEPA. Any decision by DOE to proceed with these experiments before it has fulfilled these NEPA obligations would be in violation of law. 1

A. Subcritical Nuclear Experiments Are Not "Continued Current Operations" or the "No Action Alternative" at the Test Site, But Rather a Proposal for Major Federal Action with Significant Impacts

The Draft NTS EIS categorizes all projects and activities at NTS into one of five categories: Defense, Waste Management, Environmental Restoration, Nondefense Research and Development, and Work for Others. In its description of the Defense Program, DOE includes the following: "Other aspects of the program include treaty compliant and permitted conventional high-explosive tests, dynamic experiments and hydrodynamic testing." Draft EIS at S-4.

For each of the program areas, the Draft EIS analyzes four alternatives: "(1) Continue Current Operations (No Action Alternative), (2) Discontinue Operations, (3) Expanded Use, and (4) Alternate Use of Withdrawn Lands." Draft EIS at S-5. Under the Continue Current Operations/No Action Alternative, DOE assumes that NTS activities will continue in the same manner and degree as they have within the past 3 to 5 years. Id. at 3.2. Amazingly enough, DOE includes under the Continue Current Operations/No Action Alternative the possibility that the President will either revoke the moratorium or invoke the "supreme national interest" clause of a test ban treaty and direct DOE to conduct one or more nuclear weapons tests! Id. at 3-3. It is difficult to imagine how such drastic action could be construed as either business as usual or no action. 2

ORGANIZATION 8 (CONTINUED)

No less surprisingly, DOE also specifically includes subcritical nuclear weapons experiments in its description of the Continue Current Operations/No Action Alternative. Virtually the only description of these tests in the Draft EIS is contained in the following sentence:

> Subcritical experiments, a subset of dynamic experiments and hydrodynamic tests, conducted with special nuclear materials would be conducted only where containment is assured.

Draft EIS at 3-3. The only other reference to subcritical nuclear experiments we could find in the Draft EIS is buried within an extensive description of non-nuclear hydrodynamic tests and dynamic experiments:

> Dynamic experiments and hydrodynamic tests may include the use of special nuclear material; however, those that are to be conducted are designed to remain subcritical; i.e., no self-sustaining fission chain reaction will occur. ...Subcritical experiments and tests performed at the Lynxt Complex may contain special nuclear materials.

Draft EIS at A-11. The Draft EIS discusses the potential environmental impacts of all "Continue Current Operations/No Action" alternatives, including resumption of nuclear weapons testing, as one combined activity. DOE concluded that these impacts would be small because it compared them to the extensive contamination and other environmental impacts that have already occurred as a result of previous testing operations. Draft EIS at 3-36. No attempt was made to address the impacts of the subcritical tests, weigh them against any benefits of proceeding with such tests, or evaluate alternatives. Nor can we find the detailed descriptions of the subcritical tests that were provided following the announcement of testing last fall. 3

ORGANIZATION 8 (CONTINUED)

3 cont.

Despite DOE's classification scheme, it is clear that subcritical nuclear experiments are neither a continuation of current operations nor a "no action alternative." DOE agrees that the "emphasis of the U.S. nuclear weapons program has shifted dramatically over the past few years from developing and producing new weapons to dismantlement and maintenance of a smaller enduring stockpile." Draft SSM EIS at 1-1. No nuclear testing of any kind has taken place at NTS since 1992, and subcritical nuclear experiments have not yet began. Nuclear testing resulting in criticality is expressly prohibited by the President's August 11, 1995 announcement that the U.S. is seeking a "zero-yield" comprehensive test ban treaty. In fact it is not yet clear what categories of subcritical tests will be permitted under the final version of that treaty.

4

Subcritical experiments are not simply a subset of non-nuclear hydrodynamic tests and dynamic experiments. The possibility exists that flaws in experimental design or implementation of the subcritical experiments could accidentally lead to criticality. In contrast, non-nuclear tests and experiments cannot result in radioactive releases or criticality, are not currently prohibited by moratorium, and are not the subject of heated negotiations in connection with the proposed Comprehensive Test Ban Treaty.

5

To lump subcritical nuclear experiments together with non-nuclear tests would ignore the fact that conducting subcritical nuclear experiments would represent a major change in the status quo at the Nevada Test Site. The DOE Assistant Secretary for Nuclear Programs recognized this fact when he sought express approval from Secretary O'Leary to conduct subcritical nuclear experiments:

> Many nuclear weapon-related high explosive experiments are conducted each year at the laboratories and the Nevada Test Site without requiring your specific approval. Also, contained dynamic experiments using fissile material are conducted at the laboratories without your specific approval. However, because of the planned use of fissile material in experiments at the Nevada Test Site, and the recent announcement of the President to seek a "zero" yield Comprehensive Test Ban Treaty, your approval of these experiments, in principle, is requested.

5 cont.

Memorandum for the Secretary from Victor H. Reis, Assistant Secretary for Nuclear Programs: ACTION: Approval, in Principle, of Subcritical High Explosive Experiments with Special Nuclear Material at the Nevada Test Site (October 17, 1996) (Attachment 5). In announcing the subcritical nuclear tests, Secretary O'Leary also recognized the change in NTS programs represented by these new activities "The actions I have taken today ...[are] redirecting the work at Nevada to support a 'zero yield' Comprehensive Test Ban Treaty. (Attachment 1) (emphasis added).

6

Rather than "continued operations" or "no action," the request for approval of a program of subcritical nuclear experiments represents a proposal for major Federal action with significant environmental effects, and therefore requires detailed EIS analysis. The Council on Environmental Quality ("CEQ") NEPA regulations, which are binding on DOE, define "proposal" as "exist[ing] at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated." 40 C.F.R. § 1508.23. A proposal may exist in fact as well as by agency declaration that one exists. Id. The fact that the Secretary originally approved such experiments prior to the completion of sitewide and programmatic EISs does not relegate these tests to the category of "ongoing activities," particularly when the Secretary has reportedly decided to postpone the experiments until completion of such reviews.

ORGANIZATION 8 (CONTINUED)

The CEQ Regulations define "major Federal action" to include "actions with effects that may be major....Major reinforces but does not have a meaning independent of significantly." 40 C.F.R. § 1508.18. The CEQ Regulations contain an extensive definition of the term "significantly," which includes consideration of, among other things:

> The degree to which the proposed action affects public health and safety;
>
> The degree to which the effects on the quality of the human environment are likely to be highly controversial;
>
> The degree to which the possible effects on the human environment are highly unlikely or involve uncertain or unknown risks; and
>
> The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration;

6 cont.

40 C.F.R. § 1508.27. Courts have held that the presence of even one of these factors would be sufficient to render the impacts significant. Agencies are required to consider all significant environmental effects even if they were not identified in the scoping process. Oregon Natural Resources Council v. Marsh, 52 F.3d 1485 (9th Cir. 1995). Moreover, agencies must consider not only ecological impacts but also economic, cultural, social and other related impacts, whether direct, indirect or cumulative. 40 C.F.R. § 1508.8.

In this case, subcritical nuclear experiments meet a number of the above tests for determining significance. The experiments pose a risk of accidental releases of radiological and toxic materials that could have a significant effect on public health and

ORGANIZATION 8 (CONTINUED)

safety. The experiments themselves, particularly their potential impact on a comprehensive test ban treaty, could prove highly controversial. Both the environmental and nonproliferation risks of these technologies are highly uncertain and involve unique and unknown risks. Launching a program of subcritical experiments may establish a precedence for future similar actions in the U.S. and abroad.

6 cont.

After DOE announced its plans for subcritical nuclear experiments, NRDC twice wrote to the Department expressing its doubts about the need for and validity of such tests, and describing significant concerns about the negative impacts of such tests on test ban treaty negotiations and other U.S. nonproliferation efforts. These letters are included as Attachments 6 and 7 and incorporated herein as comments on the Draft NTS EIS.

B. DOE Should Not Relegate Discussion and Analysis of the Subcritical Nuclear Experiments to a Classified EIS Appendix

Shortly after its perfunctory mention of subcritical nuclear experiments, the Draft EIS states: "Further Lyner Complex details will be addressed in a classified appendix to the NTS EIS." Draft EIS at A-12. It is unclear whether this classified appendix includes any further discussion of the planned subcritical experiments. Even if it does, however, in light of the amount of information about the experiments that has already been made available, such a completely classified discussion would not satisfy the purpose and goals of NEPA, and would violate DOE's classification guidelines and the spirit of Secretary O'Leary's "Openness Initiative."

7

The disclosure of information under NEPA is governed by the provisions of the Freedom of Information Act, 5 U.S.C. § 522 (1976) ("FOIA"), which is expressly incorporated by reference into NEPA. See 42 U.S.C. § 4332(2)(c). Exemption 1 of

ORGANIZATION 8 (CONTINUED)

FOIA in turn allows nondisclosure of materials which are "(A) specifically authorized under criteria established by an Executive order to be kept secret in the interest of national defense or foreign policy and (B) are in fact properly classified pursuant to such Executive order." 5 U.S.C. § 552(b)(1) (1976). DOE NEPA regulations reflect this regime as follows:

> (a) Notwithstanding other sections of this part, DOE shall not disclose classified, confidential or other information that DOE would not disclose pursuant to the Freedom of Information Act and DOE's regulations implementing the FOIA, except as provided by 40 C.F.R. § 1506.6(f) (citations omitted).
>
> (b) To the fullest extent possible, DOE shall segregate any information that is exempt from disclosure requirements into an appendix to allow public review of the remainder of a NEPA document.

7 cont.

10 C.F.R. § 1021.340 (a) and (b) (emphasis added). To the extent that DOE has decided to relegate any detailed discussion of subcritical nuclear experiments to a classified appendix, it is not violating the purpose and spirit of NEPA and FOIA to provide maximum access consistent with the needs of national security. First, as discussed above, DOE has already provided considerably more information to the public about the planned experiments than appears in the unclassified portion of the EIS. Second, DOE has repeatedly emphasized that the tests will be conducted in a open, transparent manner, and has even considered the possibility of opening them to representatives of foreign governments. Any subsequent decision that information already released to the public must now be considered classified expressly contravenes DOE's announced policy of openness.

ORGANIZATION 8 (CONTINUED)

Courts have held repeatedly that the limited exceptions to FOIA must be construed narrowly because disclosure, not secrecy, is the dominant objective of the Act. See, e.g., Fisher v. U.S. Dept. of Justice, 772 F. Supp. 7 (D.D.C. 1991), aff'd 968 F.2d 92 (D.C.Cir. 1992). The situation here is very different from that in the Supreme Court case of Weinberger v. Catholic Action of Hawaii/Peace Education Project, 450 U.S. 1039 (1981), where the Navy could not even admit or deny the existence of a proposal to store nuclear weapons without revealing classified information. To the contrary, as described above, DOE held a press conference to announce the experiments, revealed the planned dates and details of the tests, and plans to allow the news media to be present at the test site when the tests are conducted.

7 cont.

In such cases, courts have held that nonexempt portions of a document must be disclosed unless they are "inextricably intertwined" with the exempt portions such that excision of exempt information would impose significant costs on an agency and produce an edited document with little informational value. Neufeld v. Internal Revenue Service, 646 F.2d 661 (D.C. Cir. 1981). It is hard to imagine how DOE's classified appendix would meet this test. In particular, it is difficult to see how a discussion of alternatives to the planned action, which has been described as the "heart of the environmental impact statement" (40 C.F.R. § 1502.14), cannot be included in the unclassified portion of the NTS EIS.

C. Subcritical Nuclear Experiments Cannot Meet the Test for Interim Actions That May Proceed Before Completion of the Sitewide and Programmatic EISs

8

DOE cannot make a reasonable argument that the subcritical nuclear experiments can proceed as interim actions on the basis of an adequate existing EIS before completion of the sitewide and programmatic EISs. The CEQ Regulations provide:

ORGANIZATION 8 (CONTINUED)

> While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action (1) is justified independently of the program; (2) is itself accompanied by an adequate environmental impact statement; and (3) will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

40 C.F.R. § 1506.1(c). The subcritical experiments cannot meet any of these three requirements for permissible interim actions. First, the experiments are by DOE's own definition an integral part of the Stockpile Stewardship and Management program, which now also constitutes a major part of the mission of the Test Site. The experiments have no independent justification outside of the programs described in the programmatic SSM EIS and the NTS EIS, and should not proceed until such reviews are complete. Second, the subcritical experiments have never been analyzed in an adequate environmental impact statement. Since these particular type of experiments have never been performed under the proposed conditions, previous EISs could only have discussed actual weapons tests and/or nonnuclear tests. As discussed above, however, DOE has gone to great lengths to distinguish the planned subcritical experiments from previous nuclear weapons tests, and non-nuclear tests are clearly distinguishable as well. Finally, interim action on the planned subcritical nuclear experiments would tend to determine subsequent development or limit alternatives, particularly after scarce agency resources have been allocated to test preparation at NTS. For these reasons, DOE cannot proceed with the subcritical nuclear experiments prior to an adequate NEPA review in the sitewide EIS and/or the programmatic EIS on Stockpile Stewardship and Management.

8 cont.

ORGANIZATION 8 (CONTINUED)

D. The Draft Programmatic EIS on Stockpile Stewardship and Management Does Not Provide an Adequate NEPA Review of the Planned Subcritical Experiments

DOE cannot justify a failure to consider the planned subcritical nuclear tests and explore all reasonable alternatives based on an argument that the Programmatic EIS on Stockpile Stewardship and Management provides an adequate review of these issues. Courts have held that where a programmatic EIS contains an adequate discussion of impacts and alternatives to a particular project, a subsequent project-specific EIS analysis is not always necessary. Yet in this case the programmatic EIS also fails completely to discuss any aspects of the planned subcritical experiments. NRDC's comments on the Stockpile Stewardship and Management Programmatic EIS explain why a thorough discussion of purpose, need and alternatives to the subcritical tests belongs most appropriately in the Programmatic SSM EIS, although it could also be included in the sitewide EIS. At this point, however, both documents completely fail to consider whether such tests should proceed at all in light of their environmental and nonproliferation risks, and if so, whether it would be more appropriate and feasible to conduct at them at one of the DOE weapons laboratories.

9

E. In Light of the Inadequacies in Both the Programmatic and Sitewide EISs, DOE Must Prepare and Circulate Revised Draft EISs To Analyze Subcritical Nuclear Experiments

The CEQ Regulations provide: "If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion." 40 C.F.R. § 1502.9(a). In this case, both the draft NTS and the draft SSM PEIS provide no analysis at all of the planned subcritical nuclear experiments.

10

ORGANIZATION 8 (CONTINUED)

5-02-1996 5:31PM FROM NRDC WASHINGTON 202 783 5917 P.7

Donald Elle
May 3, 1996
Page 15

NRDC hereby requests that DOE prepare and circulate a revised Draft NTS EIS in order to discuss impacts and alternatives to these experiments in a meaningful manner. NRDC makes a similar request with respect to the SSM PEIS in its comments on the draft of that document. Any decision by DOE to proceed with these experiments before it has fulfilled its NEPA obligations in this manner would be inconsistent with the purpose and spirit of NEPA and in violation of law. 10

We thank DOE for the opportunity to provide these written comments, and look forward to your response.

Sincerely,

Barbara A. Finamore, Esq.
Attorney for NRDC

Christopher E. Paine
Senior Research Associate

ORGANIZATION 9

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May 3, 1996

Dr. Donald Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
PO Box 14459
Las Vegas, NV 89114

RE: Comments on the Draft Environmental Impact Statement for the Nevada Test Site

Dear Dr. Elle:

Enclosed you will find comments in regards to the NTS-DEIS, complied by Rick Nielsen, on behalf of Citizen Alert. Much to our dismay, the size of the document(s), and other DOE documents currently being circulated for public comment which potentially impact the NTS, has limited our responses and comments. We therefore reccomend that the comment period be extended for at least thirty more days, and preferably forty-five. Thorough review of these documents, and others, requires a considerable amount of time and resources. Unfortunately, small public non-profit organizations are usually limited in both. 1

Below are some general comments on the DEIS.

Time line for current DOE EIS documents

Citizen Alert is concerned about the apparent "fast track" time line of the NTS-DEIS with regard to the inter-relation and integration of decisions and timeliness with all other on-going EIS's being undertaken by the DOE. Do these documents and the decisions made, accurately interact with decisions made with regard to future uses of the NTS in the NTS/DEIS? Is the NEPA review as thorough as it should be in light of the uncertainties 2

Full citizen participation for democratic decisions on issues that affect our lives. How it might be achievable

ORGANIZATION 9 (CONTINUED)

arising from other, as of yet, unmade decisions. Are decisions going to be made concurrently, or are decisions made in this document going to predetermine decisions made in the other documents, or is there no bearing whatsoever on any of these decisions. For example, if decisions are pending in other EIS's, that could potentially bring plutonium to the NTS, the impacts of that decision should be comprehensively analyzed, not just mentioned, in the DEIS/NTS document. 2 cont.

No Action Alternative

Under the list of alternatives, the no action alternative, under which DOE would continue most-all of its current operations, is in conflict with the original land withdrawal order. The ongoing waste management activities, a source of considerable waste importation into Nevada, are thus also in conflict with the land withdrawal. If the NTS is to continue its current operations under any alternatives, or expand its use, this issue must be addressed in the Final EIS. 3

The DEIS also contains major discrepancies in the amounts of waste/waste shipments between the NTS-DEIS and the WM-PEIS, which has also omitted future waste generated from site remediations. There also appears to be differences in waste volumes within the NTS-DEIS itself. This, in itself, leads one to question the thoroughness, if not just the accuracy of the DEIS. 4

Similarly, the DOE concludes, somehow, that environmental impacts under Continue Current Operations would be minimal. Citizen Alert disagrees that environmental impacts from current operations can be considered, in any way, minimal. 5

Discontinue Operations

By all means, close it down with our blessings. However, under no circumstances should the DOE be allowed to maintain control of the entire site. Those areas that require additional monitoring should be transferred to State control, with the Federal government providing budget assistance for ongoing up-keep. The State, should they so choose, could then decide to return the land to public use or return the portions still usable, to the rightful owners, the Western Shoshones. 6

Expanded Use

As it is currently structured, this alternative represents the old adage, "You've got to take the bad with the good." Too many expensive and

ORGANIZATION 9 (CONTINUED)

potentially damaging activities are thrown in this alternative along with some potentially good projects and activities. Specifically, the acceleration of defense and waste management activities, which we believe to be counter to the will and consensus of the general public. Likewise, there may be benefits from the expanded activities in environmental restoration and solar energy. However, taken together, these activities don't seem to be compatible.

Citizen Alert is also concerned about potential new missions, projects, or activities that may end-up at the NTS which have not been identified yet. This is specifically in regard to the NTS Development Corporation and their charter to pump economic life into, or out of, the unique resources of the NTS. While the utilization of the the NTS, for economic and technology development is an admirable goal, we are concerned that the timing and approval of these new activities has the potential to introduce additional contamination and environmental consequences, with little or no opportunity for public input. 7

Regarding another aspect of proposed future use, operation of the LYNER facility, we feel it is covered too vaguely in the EIS. Perhaps it is better described in Appendix J. However, since that is a classified supplement, we question how sincere DOE is in asking for public participation in the NEPA process given the inclusion of classified supplements. The public cannot adequately evaluate something that is not available for their review. The "classified" nature of Appendix J, may also hinder international non-proliferation efforts by creating a perception that, in fact, the purpose of the sub-critical tests are to facilitate the design and production of new nuclear weapons. This also has the potential to negatively impact such issues as transparency . 8

Hybrid Alternative

Citizen Alert recognizes the possibility that a fifth alternative, as described on page S-5, lines 24 and 25, as a hybrid mix of all of the alternatives, may provide the best combination of recommendations for future uses of the NTS. Provided that adequate consideration is given to public and other stakeholder input put forth during the comment period. For example, Citizen Alert would support an alternative that continued or accelerated environmental restoration activities, implemented renewable energy programs, returned to public domain certain portions of the NTS.

Framework for Resource Management Plan

Citizen Alert welcomes the inclusion of the "Framework for Resource Management Plan," and see this document as a valuable tool in future decision making. However, to be truly effective, we suggest that this document needs to be completed prior to any selected alternatives or proposed projects. Likewise, it would seem logical that a transportation

9 plan be a major component of any decision being made about alternative selections, prior to, or at least concurrently, with those decisions. This, however, appears to be the complete opposite of the DOE approach.

With regards to economic development, the RMP specifically makes mention of soliciting input from stakeholder groups such as the Community Reuse Organization, now called the Nevada Test Site Development Corporation, and operating on a $5 million grant from the DOE. Citizen Alert questions whether it is appropriate for a organization being funded by the DOE to be making recommendations to establish RMP goals that can impact future resource management decisions and activities at NTS, especially when that organization has a vested economic interest. This is wholly inadequate. We recommend that any private venture, or private-public partnership which proposes to use the

10 NTS as its operating site, be considered as a federal activity, and where appropriate, a major action, open to review under NFPA for environmental impacts. This will allow sufficient public input and involvement in decision about these activities. The alternative would be to provide grants to other "stakeholder" groups, such as Citizen Alert, in return for their contribution to establishing resource management goals.

Finally, with regard to legislation pending in both the House and the Senate which would effectively create "interim storage," of high-level nuclear waste, and begin a unprecedented transportation campaign of waste shipments, Citizen Alert asks in what manner and what format, if

11 not the NTS EIS, will the impacts of these activities be evaluated? These activities would be independent from the permanent geologic repository, and as such would not be covered under the presently "shelved" Yucca Mountain EIS. The fact that the decision hasn't been finalized is no different than the situation arising from other pending decisions in ongoing DOE programmatic EIS's, which are evaluated, to some extent, in this document.

Groundwater

While it has not been substantiated by Citizen Alert, it has been pointed out by one of our supporters that through the numerous volumes of the DEIS, several conflicting statements are made with regards to groundwater flow, characteristics, migration and contamination. We will continue to follow-up on this and file an addendum to our comments as to the accuracy of the individuals claims, as soon as we can.

Thank you for the opportunity to present these comments and we look forward to the opportunity to additional review and submitting additional comments.

ORGANIZATION 10

SIERRA CLUB - *Toiyabe Chapter*

Southern Nevada Group
P.O. Box 19777, Las Vegas, Nevada 89132

SIERRA CLUB OF SOUTHERN NEVADA
COMMENT ON THE
D.O.E. DRAFT EIS FOR THE NEVADA TEST SITE

On Feb. 1, 1995 at the CAB meeting for the Nevada Test Site Programs, Mr. Ella responded to a question from CAB member Connie Simons about a complete shutdown of all NTS activities, as proposed in Alternative 2 of the Draft EIS. Mr. Ella replied, according to the published minutes of the meeting, that "there were a lot of public comments saying the DOE should be looking at shutdown as an option." On March 6, 1995, at a St. George, Utah public meeting to discuss the Draft EIS, Mr. Ella, as quoted by the Las Vegas SUN newspaper, said that "the DOE is reluctant to consider outright closure."

1 **The Sierra Club of Southern Nevada objects to the disingenuous suggestive inclusion in the Draft EIS of an alternative use for the NTS which the DOE has no intention of considering for inclusion in the final Record of Decision. This constitutes an intentional deceitful obfuscation of the issue being considered and renders questionable the integrity of this Draft EIS.**

On January 24, 1995 CAB Board Members were asked to prioritize activities relating to the NTS. Of the 12 categories conceived, transportation received the third highest priority by the CAB Board Members. Transportation received the highest (12) level of risk in the final priority list, however TRANSPORTATION (and, also, Technology Development) WERE ULTIMATELY DELETED from the Budget Workshop Priority List. At the March 28, 1995 DOE Public Meeting at Cashman in Las Vegas, Mr. Ella replied to a transportation question that 600 more shipments of nuclear waste material would pass through Las Vegas to the NTS during the remainder of 1995. This irresponsible routing of nuclear waste shipments through a densely populated urban area was justified by the disclaimer that such shipments are carried by common carrier trucking companies which are free to choose whatever routing they deem most advantageous and that such routes are not subject to DOE oversight.

2 **The Sierra Club of Southern Nevada objects to the transportation of nuclear waste along routes which do not MINIMIZE the possibility of human exposure in the event of an accident. DOE guidelines for transportation routing of nuclear waste shipments to the NTS are so lax that they can only be considered negligent. The safe transportation of this extremely hazardous material should be considered a matter of the highest priority. Leaving route selection to common carrier dispatchers is an unacceptable component of this Draft EIS.**

3 **ADDITIONAL CRITICISM OF THE DRAFT EIS IS FURTHER DIRECTED AT THE SUBJECT OF TRANSPORTATION OF NUCLEAR WASTE TO THE NTS. Specifically it is directed at the LACK OF INTEGRATION of the analysis of the cumulative effects of transporting these nuclear materials to the NTS, and also to the Yucca Mountain and Nellis Range complexes. These programs should be integrated and should have been included in this Draft EIS. This truck transport of nuclear waste into the same general geographic area affects the same environment and should be considered part of the same whole picture.**

4 **THE AFOREMENTIONED COMMENTS ARE ALSO DIRECTED TO ANY PLAN(S) FOR TRANSPORTATION OF NUCLEAR WASTE TO THESE AREAS BY RAILROADS.**

ORGANIZATION 10 (CONTINUED)

5 **The DOE has included in the Draft EIS several properties over which it has no authority, and which have never been associated with the NTS. Solar generation at the NTS would be an excellent use of some of the NTS area, however including Coyote Spring Valley, Dry Lake Valley, and Eldorado Valley in this Draft EIS for the NTS again confuses and obfuscates the purpose of this Draft EIS.**

The DOE has not specifically indicated what alternative is the preferred DOE alternative. This is an excellent example of the time tested political strategy of using a changing or vague, or "moving target" goal to confuse critics attempting to understand a matter of policy.

6 **The Sierra Club of Southern Nevada objects to this Draft EIS because it has been inflated to confuse the reader by inclusion of significant amounts of irrelevent data on sites over which the DOE has no jurisdiction, and, also, the omission of critical information as to the DOE priority in selection of a preferred alternative which would allow meaningful public comment on this document.**

Pending in the U.S. Congress is legislation pertaining to the use of the NTS for interim storage of High Level Nuclear Waste from nuclear power plants.

7 **The Sierra Club of Southern Nevada objects to the enormous omission by the DOE of not addressing the subject of the proposed interim storage of High Level Nuclear Waste at the NTS.**

SUBJECT: Greater than Class C Nuclear Waste. As defined in vol. I, chapt. 2, page 2-9, this material "exceeds U.S. Nuclear Regulatory Commission concentration limits for Class-C low-level waste." On the next page, 2-10, it states that "the term 'similar to greater than Class-C low level waste' indicates that this waste ... was DOE generated." Also mentioned on lines 11-16 is the "concept of greater confinement for wastes that are not appropriate for near-surface disposal because of their radioactive exposure levels."

8 **The Sierra Club of Southern Nevada objects to the very vague categorization of a large quantity of nuclear waste that has a very high level of radioactivity as simply "greater than Class-C" or "similar to greater-than-Class-C." This term closely associates this material with Low Level Waste, when, in truth, it my be equally as radioactive as a spent fuel rod, but from a different source. This is deceitful categorization of nuclear materials to allow the shift into the low level category of large quantities of highly radioactive materials based solely on the origin of the material and not on the radioactive toxicity of the waste.**

9 **That the DOE has intentions to drill many, many bore holes to store this type of material at the NTS and has chosen to minimize these plans is a gross material omission of facts from this Draft EIS and renders this document absolutely incomplete. Stakeholders need to be educated about the different classes of LLW, especially "greater-than-Class-C" waste as part of any public involvement plan for waste management at the NTS, including deep bore hole storage necessitated by the high level of radioactive toxicity of a great quantity of this waste.**

ORGANIZATION 10 (CONTINUED)

The DOE has, at the direction of Secretary O'Leary, attempted to meet a time deadline of 15 months for the completion of this Draft EIS.

10 **The Sierra Club of Southern Nevada objects to the "fast track" approach which the DOE has implemented in the preparation, release, and review process for this Draft EIS. Just because Secretary O'Leary has directed that this draft be completed quickly does not mean that this is an adequate amount of time to complete the necessary two-way public dialogue on an issue of this importance.**

11 **Because of the serious nature of the omissions, the distracting inclusion of irrelevant data, the vague defining of the future DOE mission for the NTS, and the denial by the DOE of its relationship to adjacent DOE sites, the Sierra Club of Southern Nevada believes that this Draft EIS is fatally flawed and that it should be reissued in a much more forthcoming and user friendly form that will allow and encourage a more accurate exchange of information between the stakeholders and the DOE.**

Prepared by Fred E. Dexter, Jr.,
Member of the Sierra Club - Toiyabe Chapter,
Southern Nevada, Conservation Committee

Fred E. Dexter, Jr. 4/20/96

Authorized by Randy Harness,
Member Board of Directors,
Conservation Committee Chairperson,
Sierra Club - Toiyabe Chapter
Southern Nevada,

Randy Harness

ORGANIZATION 11

TO: Donald R. Elle
U.S. Department of Energy
Nevada Operations Office

FROM: ALT 2 Subcommittee

DATE: April 6, 1996

SUBJ: ALT 2 ISSUES & COMMENTS

The Alternative 2 (closing the Test Site) has many positive impacts for the Nevada Stakeholders.

These positive impacts are

P1. There would be no further importation of nuclear waste & materials into the state of Nevada, and of course no more long term storage and/or disposal of this imported waste.

P2. All the transportation problems associated with bringing the nuclear waste into Nevada would be solved.

P3. The stigma of being a nuclear waste dump would gradually fade from being an issue.

P4. There would be no further degradation to the environment.

Unfortunately there are several negative impacts from closing the test site that will override the positives impacts for the stakeholders of Nevada.

These negative impacts are (national rather than local)

N1. The national defense mission of the Depart. of Defense would be extremely negatively impacted, unfortunately as history has shown. We have to have a strong national defense mission. There are still nations & regions that would destroy us if they could (no names though) NTS is the only place we have to test nuclear and other devices if we ever have to again. It would be almost impossible to site another location nowadays. We have only a temporary nuclear test ban at present, and even this is not honored by all nations.

N2. The Dept. Of Energy's overall mission would be seriously negatively imparted in order to clean-up other DOE sites around the country the DOE needs a storage place for all the low-level waste. NTS is planned to be one of the major disposal sites for low-level waste in the DOE complex, if not the major disposal site. This is also probably true for high-level waste, spent fuel, and maybe greater than class C waste.

ORGANIZATION 11 (CONTINUED)

N3. On a local level there would be a loss of jobs and other economic benefits if NTS is closed. (Although this represents less than 1% of Las Vegas economy).

N4. There would be no clean up or environmental restoration of existing contamination.

Summary
From a strictly local point of view it would be beneficial to close the Nevada Test Site, but from an overall national view point the Nevada Test Site should not be closed.

Other comments on EIS in general

1. No matter what option is chosen we are leaving behind a legacy and a source of serious contamination for our children and their descendants.

2. There is no guaranteed source of funding for the future monitoring and security that will be needed for 100's of years to safeguard the public from contamination that has occurred in the past and maybe added to in the future. 1

3. Nevada is getting the short end of the stick. We are targeted for a lot of waste, but not very many positive programs. The positive programs go elsewhere. The waste comes here. We want equity.

4. There's not much information of what and how much greater than class C radioactive waste may come to NTS-RED FLAG. This needs to be checked out. 2

5. No mention in EIS. But is colloidal movement of radioactive material a possible future problem.

6. The policy of totally separate EIS's for NTS, Yucca Mountain, etc, is wrong. The cumulative problems of transportation, radiation exposure, socioeconomic, cultural aspects, etc., need to be addressed for the directly impacted local resident stakeholders. 3

7. The socioeconomical impacts on Pahrump have not been adequately addressed in the EIS. Historically only a small percentage of NTS employees have resided in Pahrump. But due to the very high growth rate that has occurred, and continues to grow, in the last couple of years. This would probably change, whereas Pahrump lacked many features like major grocery markets, fast food stores, gasoline stations, middle class housing subdivisions, etc. These facilities have now been built and/or are being built right now. This will make it much more likely that future employees will make there home in Pahrump because it is closer to 4

ORGANIZATION 11 (CONTINUED)

1053 4

NTS and out of the congested and higher cost housing areas of Las Vegas. The population figures used in the EIS do not reflect the growth that has occurred in Pahrump. Therefore alternative three could have a serious impact on our schools, police dept, land fills and other infrastructure. If we get more residents as a result of a large increase in employment at NTS under alt. 3.

[redacted]

Dale Schutte

Dale Schutte

ORGANIZATION 12

(1) OF (1)
5-2-96

TO- MR. DONALD ELLE, DIRECTOR
DEPT. OF ENERGY

FR- CITIZENS FOR RADIATION FREE ENVIRONMENT

RE- ENVIRONMENTAL IMPACT STATEMENT/NEVADA TEST SITE

WE ARE VERY CONCERNED THAT THE FASTEST GROWING COMMUNITY IN THE U.S. TODAY— LAS VEGAS— WILL BE PLAGUED WITH ALL OF THE HAZARDS CONNECTED TO THE NEVADA TEST SITE SITUATION.

IT IS INSANE TO CONTINUE SUCH POTENTIALLY HAZARDOUS ACTIVITIES SO CLOSE TO SUCH A METROPOLIS AS LAS VEGAS.

I SPOKE WITH THE FORMER UNDER-SECRETARY OF ENERGY (BUSH ADMINISTRATION) DR. HUGO POMERENU (NOW PRESIDENT OF ATG (AMERICAN TECHNOLOGIES GROUP)- AND HE SAID THAT THEIR "BASER" WILL (IN 3-4 YEARS) COMPLETELY & SAFELY "DE-FUSE"/NEUTRALIZE ANY URGENT PLUTONIUM FUEL....

IN THE MEANTIME THE ENVIRONMENTAL IMPACT STATEMENT NEEDS TO BE REDONE FOR THE FOLLOWING REASONS:

1 | 1. Inclusion in the draft of irrelevant properties which confuse the issue;
2 | 2. Omission of important data on the DOE response to interim storage proposals;
3 | 3. Inadequate evaluation of transportation routes and common carrier oversight;
4 | 4. The "fast track" preparation of this draft has created a poor quality document.

Sincerely,
Michael O. Rawl
PRES., CRFE
Dr. Helen Caldicott
Dr. Gerald Eisenbud
Dr. Ernest Sternglass

(702) 645 0562

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PRIVATE CITIZEN 1

March 5, 1996

Department of Energy
Public Hearing of the proposed Nevada Nuclear Waste Depository.
Dixie College Cox Auditorium
St George, Utah 84770

Re: A safe highway route around St. George, Utah for nuclear waste shipments on Interstate 66

To Whom it may concern,

The attached map of the USA shows the proposed Interstate highway routes for shipping nuclear waste to the Southern Nevada proposed Nuclear Waste Depository, as printed in the Salt Lake Tribune. More than ⅓ of all North American nuclear waste is to be shipped through the center of Cedar City and St. George, Utah! Interstate 15 is overcrowded in these cities and there is a high rate of heavy truck and semi-truck wrecks, especially in the Virgin River Gorge portion of I-15

The State of Nevada and Las Vegas City is planning to build a new railroad system to divert the rail shipments of nuclear waste completely around and North of the Las Vegas region, to diminish the possibility of shipping 'incidents'. The proposed highway shipments of nuclear waste can be completely diverted around St. George City, Washington County, and Southern Utah on the newly proposed **INTERSTATE 66** and **SOUTHERN CORRIDOR HIGHWAY** and delivered to the Nevada Test Site on **INTERSTATE 66**

INTERSTATE 66 is the proposed 21st Century, 6-lane, high-speed freeway to cross the trans-continental United States from coast to coast and not to cross any metropolitan areas. This new **INTERSTATE 66** will be built on the "Spine Concept", with traffic connecting to the mainline of the freeway with connector freeways from the metropolitan areas.

1 The most physically challenging and critical section of the **INTERSTATE 66** is between the Virgin River Gorge of I-15 in St. George, Utah and Page, Arizona. If this section is built first, then the nuclear waste shipments would be routed around St. George to the South and avoid the St. George City area, altogether.

If a nuclear depository is created in Southern Nevada, then the highway to transport the waste through Washington County should be built first!

Paul K. Bevan

Paul K. Bevan 715 North 1800 East St. George, Utah 84770 801-673-8007

RECEIVED MAR 11 1996

PRIVATE CITIZEN 2

THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the NEVADA TEST SITE and
OFF-SITE LOCATIONS IN THE STATE OF NEVADA

Nevada Test Site EIS Hearing Comment Sheet

Meeting Location: St. George
Meeting Date: 3/5/96

Please Enter Your Name, Organization and Address Below:

L. Wilkinson
Your Name

St. George
Organization

Box 609 Washington
Street Address

St. George
City

Ut.
State

Zip Code

Thank you for attending this hearing. Please use this sheet (and attachments if needed) to inform us of your written comments on this EIS.

When commenting, please indicate beside your comment the applicable issue category number from the list below. This will help us to ensure that your comment is considered in the relevant section of the EIS. You may identify additional issue categories as needed.

1. Land Use	12. Cultural Resources (includes American Indian Perspective)	16. Nuclear Policies	22. Work for Others Program
2. Transportation	13. Occupational and Public Health and Safety/Radiation (Includes Human Health Risk)	17. Big Explosives Experiment Facility	23. Alternative 1 - Continue Current Operations (No Action Alternative)
3. Site Support Activities		18. Defense Program	24. Alternative 2 - Discontinue Operations
4. Socioeconomics		19. Waste Management Program	25. Alternative 3 - Expanded Use
5. Geology and Soils		20. Environmental Restoration Program	26. Alternative 4 - Alternate Use of Withdrawn Lands
6. Surface Hydrology		21. Nondefense Research and Development Program	27. NEPA Process
7. Groundwater			28. Other
8. Biological Resources			
9. Air Quality	14. Environmental Justice		
10. Noise	15. DOE Environmental Policies and Procedures		
11. Visual Resources			

TOPIC NUMBER COMMENT (continue on back if needed)

Please see attached

He feels he represents the silent majority who would like to keep the NTS open.

RECEIVED MAR 11 1996

Please hand this form in today or mail before May 3, 1996 to:

U.S. Department of Energy
Environmental Impact Statement
P.O. Box 14459
Las Vegas, NV 89195-8066

PRIVATE CITIZEN 2 (CONTINUED)

St. George, Utah
Memorandum March 5 1976

To: D.O.E. officials
From: Kelvin Wilkinson and Family
Subject: Future Use of Nevada Test Site:

1 As members of the Silent Majority in this area, we wish to go on record as favoring continued use of the Nevada Test Site.

The noisy minority of the people here are motivated by political and money interests. They become almost hysterical over anything relating to Nuclear Energy and don't consider the problems of our day in a rational manner. It would be a tragic mistake to adhere to their demands for abandonment of the Test Site facilities.

2 The Test Site must be kept in readiness for future use in light of very unsettled World conditions. Perhaps most important power is the fact that this facilities can be used to dismantle nuclear weapons as World Conditions justify.

3 Of course the storage of nuclear waste is another valid option.

4 The possibilities for research here are unlimited. In fields not relating to Nuclear Energy. The facilities lends itself well for research and

PRIVATE CITIZEN 2 (CONTINUED)

4 cont. experimentation in solar energy, hydro energy, environmental studies and medical research only to mention a few.

It would be a terrible waste of tax payers money to abandon the facilities when it lends itself so well for studies and experimentation into problems of our day.

We go on record as supporting the continued operation of the Nevada Test Site. The dynamics of the operation should be controlled and directed by D.O.E. officials and other knowledgeable personell, and not by crowd hysteria.

Sincerely,

Kelvin Wilkinson
and Family,

PRIVATE CITIZEN 3

THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the NEVADA TEST SITE and
OFF-SITE LOCATIONS IN THE STATE OF NEVADA

Nevada Test Site EIS Hearing Comment Sheet

Meeting Location: _____

Please Enter Your Name, Organization and Address Below *Meeting Date:* 3 5 96

Dan R. Beckstead — Private Citizen
Your Name *Organization*

[redacted] Las Vegas Nevada
Street Address *City* *State* *Zip Code*

Thank you for attending this hearing. Please use this sheet (and attachments if needed) to inform us of your written comments on this EIS.

When commenting, please indicate beside your comment the applicable issue category number from the list below. This will help us to ensure that your comment is considered in the relevant section of the EIS. You may identify additional issue categories as needed.

1. Land Use	12. Cultural Resources (includes American Indian Perspective)	16. Nuclear Policies	22. Work for Others Program
2. Transportation	13. Occupational and Public Health and Safety/Radiation (includes Human Health Risk)	17. Big Explosive Experiment Facility	23. Alternative 1 - Continue Current Operations (No Action Alternative)
3. Site Support Activities		18. Defense Programs	24. Alternative 2 - Discontinue Operations
4. Socioeconomics		19. Waste Management Program	25. Alternative 3 - Expanded Use
5. Geology and Soils	14. Environmental Justice	20. Environmental Restoration Program	26. Alternative 4 - Alternative Use of Withdrawn Lands
6. Surface Hydrology	15. DOE Environmental Policies and Procedures	21. Nondefense Research and Development Program	27. NNSA Policies
7. Groundwater			28. Other
8. Biological Resources			
9. Air Quality			
10. Noise			
11. Visual Resources			

TOPIC NUMBER — COMMENT (continue on back if needed)

1 If I remember correctly, the possible negative, long-term, detrimental health effects to myself, my children, my grandchildren, Mark Twain Junior High, I believe about removed about miles like those that have been documented around Hanford Washington Commercial Power Plants. Is my family at risk? If so, how much? What can I do to minimize & protect my family?

2 If I'm interested in knowing more, possibly getting in a field relating to waste management, I will.

RECEIVED MAY 1 1996

Please send this form today or mail before May 3, 1996 to:

U.S. Department of Energy
Environmental Impact Statement
P.O. Box 14459
Las Vegas, NV 89114-4459

PRIVATE CITIZEN 4

[redacted]

[redacted]
Mr. John H. Lawlor
[redacted]
Las Vegas, NV 89106

MR DON HILL, DIRECTOR,
ENVIRONMENTAL PROTECTION DIVISION
U. S. DEPARTMENT OF ENERGY.

DEAR SIR.

SAW YOUR NAME IN THE LOCAL PRESS AND YOUR REQUEST FOR COMMENTS RELATING TO THE NEVADA TEST SITE.

AS A POWER EMPLOYEE, 1964 1985, I was interested.

SHOULD YOU BE INTERESTED TO KNOW. I HAVE SENT A LETTER, BY CERTIFIED MAIL, INFORMING MRS CLEARY THAT NUCLEAR WASTE CAN BE RECYCLED AND CAN BE RECYCLED TO A LITTER THAN ITS ORIGINAL VALUE AS FUEL FOR THE ATOMIC POWER INDUSTRY. OR CONVERTED INTO BENEFITS OF ENHANCED MARKET VALUE.

1 BECAUSE I HAVE HAD A STROKE, AND IN A FEW MONTHS WILL BE 90 YEARS OLD, IT IS NOT WISE OR PRUDENT THAT I GET INVOLVED IN THIS WORK. SO I SUGGESTED THAT DOE CONTRACT WITH THE E, O, AND O, PEOPLE TO SEE IF THEY WOULD BE INTERESTED IN THE PROGRAM, AND SUGGESTED THAT SHE PUT MY FRIEND, MR W. H. J. KING AS ADMINISTER OF THE PROGRAM. MR KING IS THE ASSISTANT TO THE SECRETARY FOR ENVIRONMENTAL RESTORATION. BUT POLITICS BEING WHAT IT IS, I DO NOT EXPECT TO HEAR FROM MRS O RILEY, AND I AM NOT SEEKING INVOLVEMENT AT THIS TIME, BECAUSE OF A GAME THAT YOU ARE FAMILIAR WITH AND IS CALLED MUSICAL CHAIRS, HOWEVER IT IS TO BOTH MRS O RILEYS AND PRESIDENT CLINTONS ADVANTAGE TO SPONSOR THE WORK AS THEY CAN CLAIM THE CREDIT.

I AM PROBABLY JUST AS WELL OFF IF I SEE NOTHING MORE ABOUT MY WORK UNTIL AFTER THE ELECTION BECAUSE IF THEY WERE TO START MY PROGRAM AND THEN LOSE THE ELECTION, I WILL HAVE TO START ALL OVER AGAIN WITH THE NEW TEAM.

JOHN H. LOCKE

RECEIVED MAY 1 1996

PRIVATE CITIZEN 5

February 26, 1996

Hotline comment

Commentor: Anonymous

This commentor called to express his opinion **and to ask that someone call him back.**

1 | He is opposed to transportation of nuclear materials by train; i.e., through Las Vegas; and he is
2 | against putting them in Yucca Mountain in any form.

3 | He is also against all nuclear testing in general, and hopes that the Test Site can be used for other
4 | purposes.

I told him I would pass along his request, and mentioned that he could submit his comments in writing to Mr. Elle at the address in the transmittal letter of the DEIS.

PRIVATE CITIZEN 6

3-13-96

RECEIVED MAR 1 8 1996

Dear Sir!

My father worked at DOE for 23 yrs till he died in 1983 the doctors told us it was Cancer But 2 ortopsedes never put on them what he died from So we put papers in for the Benefits

PRIVATE CITIZEN 6 (CONTINUED)

(2)

to be paid to the families for $75,000.00 from D.O.E. Your doctors said we couldn't get paid because it covered all these cancers but not Lung Cancer which your doctor say he died from. But my doctor + 2 orthopaes did not just Cancer they

PRIVATE CITIZEN 6 (CONTINUED)

(3)

said. So then I talked to a Lady in Senators "Reeds" office that said Write to you + see if you could help me or see what; or if we could do anything.

Thank You So Much

Rosie Rowsey

PRIVATE CITIZEN 6 (CONTINUED)

Roxie Roundy

85 west 200 South
P.O. Box 550
Panguitch, Utah
84759
801-676-2433

My Fathers Name
was

Edward L. McCoy

please write or
call me
Thank you

PRIVATE CITIZEN 7

SLAKEY BROTHERS, INC
1050 Linda Way
Sparks, NV 89431
Mail: P.O. Box 10025
Reno, NV 89510
(702) 359-7106

2-5-96

Hi

Thanks For Sending me The material on the DOE/EIS Draft. I would Like To Comment on the Vol 2 Framework for Resource management Plan

Table 2-1 Pg 2-2

1 | 1. Future missions as yet unused (to be added)
2 | 2 use of land for use as Recreation and other activities

Pg 2-3 How Reservations on NTS managed and Conserved

3 | More open less Secret
4 | More of an Educational Site for Advance Studies
Less of a military installation

Pg 3-8 Partnerships for Ecosystem management

5 | A visitor center off Hy 95 South of Mercury. A 1st class visitor center with Films, Books, Movies etc. in Order to receive A Continueing update of Rock Opinion as time goes by

STEVE LADNIER
230 E. 6TH AVE.
SUN VALLEY, NV 89433

RECEIVED MAR 1 1 1996

PRIVATE CITIZEN 8

March 7, 1996

US Department of Energy
Environmental Impact Statement
PO Box 14459
Las Vegas, NV 89195-8066

Gentlemen:

I am unable to attend the meeting on Tuesday, March 26th, but I would like to add my comments--for what they are worth.

I believe the public is getting rather tired of the federal government trying to "protect us from ourselves." We are told that one (out of how many??) testing station registered too high two days out of 365 days last year. This test site is generally agreed by many, including experts, to be already contaminated due to its location. This means it is not typical of the area, so why is the entire area being judged based on results from this one site. You are threatening to impose mandates on the entire area--ignoring, I suppose, the test results from any of the other sites--based on readings of only two days during the year from one isolated site.

Mandates, gentlemen, are frightening to the public. It always means we are being compelled to do something that we would not do voluntarily. It also means that somebody wants to force their particular brand of control on others. In this situation, it would appear that what you plan to require, order and command us to do is not even generally accepted as necessary or for the public good. In any case, this is something that should be left up to the state or local governments to determine. (As most things are that the federal government has their hand in!)

1 I would suggest that you take a hard look at that particular test site and its close surrounding area. Perhaps the answer is not imposing MANDATES to correct something that is not a problem, but moving the dam test site to an area that is not already precontaminated in its environment.

Sincerely,

Avis Dillon

Avis Dillon
861 Whitney Ranch #1216
Henderson NV 89014

PRIVATE CITIZEN 9

3-4-96

U.S. Dept. of Energy
Environmental Impact Statement
P.O. Box 14459
Las Vegas, Nevada 89195-8066

Dear Sir or Madam:

1 It would be difficult to express my disgust with the Nevada Test Site. I don't want any more
2 testing. I don't want radioactive materials being transported on our roads and stored in Nevada. I don't want any more promises about how "safe" these activities are for Utah residents.

My family has suffered considerably from illness and death which we feel are directly related to the testing program. I am now nursing my father through small intestine cancer which may also be related to the testing. We can count all the neighbors who have cancer, and who have died of cancer over the years, and the numbers are exploding.

We have suffered because of the government's arrogance. We paid our taxes and that money was used to take chances with our lives. My level of anger is beyond what you want to read, but I protest any further testing. I protest against the use of the site for nuclear storage which
3 will subject us to dangers on our roads as well as in our air and soil. I certainly protest the idea
4 of nuclear powered rockets which could spray radiation in an accident. NO MORE!!! Leave us be.
5

6 Solar energy development does make sense. Wind energy development makes sense. Finding
7 uses for recycled materials makes sense. These may not be as "sexy" as waiting until the wind
8 can blow poison our way, but useful non-hazardous projects are a better use of taxpayer funds.

Sincerely yours,

Sara Penny

Sara Penny
270 S. 200 W.
Cedar City, UT 84720

(801) 586-2286

PRIVATE CITIZEN 10

March 6, 1996

Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

To Whom It May Concern,

1 This letter is to protest any further use of the Nevada Test Site. There has been a significant increase in cancer and related deaths can be directly linked to the testing that occured on this site for over 40 years. How can you ignore the evidence?

2 I urge you to leave the site alone (as in permanently close) as soon as possible. The earth needs to heal itself and you need to stop blantently ignoring the health and environmental problems caused by testing at this site.

If your family members were the ones in Southwest Utah and Nevada suffering from cancer you'd probably support closure of the base too. Please consider the resounding call for closure you are hearing from citizens of this region.

Sincerely,

Mary

Mary Wertheimer
P.O. Box 2105
Cedar City, UT 84721

PRIVATE CITIZEN 11

1 The nuclear weapons Testing from 1951 to 1992 did horrendous damage to Utahns downwind from the Nevada Test Site.

2 There must be no alternative to the outright closure of the Test Site. It must be buried forever.

Ires A Rowland
1225 Bryan Ave
Salt Lake City, Utah
84105

RECEIVED MAR 1 4 1996

PRIVATE CITIZEN 12

DOE
P.O. Box 14459
Los Vegas, Nevada 89114

Gentlemen:

Re: The Salt Lake Tribune's coverage of public hearings on fallout effects in the 1950 era.

1 The hearings did not cover the issue of long term storage of high level radioactive waste. This is by far the more important issue in closing the site.

I am a retired dentist who practiced 45 years in San Francisco. As a hobby, I used to set up cameras aimed over the San Mateo bridge at Frenchmans Flat early in the dark of the morning. Light from the nuclear blasts would fill the eastern sky with a false dawn of metallic-hued colors of the rainbow.

I will not belabor the truly major problems of storage of plutonium-related wastes. Half-lives of 24,500 years defy understanding in the complex tasks immediately facing our nation.
2 A place to bury them is absolutely essential. This is <u>far</u> more important than memories of earlier exposure to fall-out.

This is a cruel, but necessary judgement.

3 Do <u>not</u> close the nuclear testing site.

Ramon S. Wilcox

Ramon S. Wilcox, DDS

PRIVATE CITIZEN 13

March 6, 1996

Dr. Alle Rueda
Environmental Protection Division
U.S. Dept. of Energy, Nevada
Las Vegas, Nevada – 89114

Dear Mr. Alle,

I'm writing about article in Sunday's Las Vegas Sun 2/25/96 Test Site Future. I would like to request copies of the EIS to infact as much information on what is the exact future of Nevada especially around Las Vegas. I was hoping to see day more permanently at NTS. As we all know how LV is growing in so many ways. At the same time I do not want to put my family or myself in any
1 danger to our health. It's really disturbing when you read about hazardous waste, or contamination created by more than 500 - below-ground nuclear blasts, mention by the EIS. I would very much like a response with all the information I've requested.

Sincerely,

Mrs. Linda Klaus

RECEIVED MAR 1 4 1996

PROCESSED MAR 1 4 1996

PRIVATE CITIZEN 14

Report for D.O.E. Meeting on the E.I.S. on N.T.S.

Pahrump, Nevada, March 13, 1996

My name is Sally Devlin and I live in Pahrump, Nevada. My home is 30 miles from the test site and 90 miles from Yucca Mountain. Both are located totally in Nye County, Nevada. The Federal Government owns approximately 93% of Nye County. We are the third largest county in the U.S.

1 Years ago I became interested in the transporation studies because there was a planned railroad to come through Pahrump. On page 3-2 of the draft E.I.S. on N.T.S. and Off Site Locations in the State of Nevada is a map of the state and the N.T.S. Deleted is highway 160 which goes from Las Vegas, Clark County through Pahrump, Nye County. This highway parallels highway 95 which also goes from Clark County to Nye County where N.T.S. is located.

Somehow in this draft E.I.S., Volume I, Appendix I, Transporation Study on Pages 3-18, 3-20, 3-22 are maps using highway 160 to transport waste. These routes are mapped on pages 3-25 the risks are on NV-5, NV-7 and NV-9, and others. Coming over from I-15 to 160 in Clark County is two lanes, over the pass at Mountain Springs which is approximately 5,500 feet and alternates 3 lanes for a short distance. Another 40 miles, 16 which are in Nye County are all 2 lanes except for 16 miles through the center of town which will be 4 lanes once construction is completed. Another 40 miles on 160's 2 lanes and then the highway connects with 95 which has 4 lanes to the N.T.S. The 90 or so miles on 160 has no auxiliary roads. We have a few paid firemen in our 55 member volunteer
2 group. We desperately need F.E.M.A. funds to train and equip our firemen. Las Vegas recently had 70 to 75 trained in Maryland for a week. We were totally ignored.

Liquid Nitrogen as well as liquid Cyanide, propane, gasoline and other
3 hazardous materials travel this congested road 160 all the time. I gave a worst case senario on a spill at the Indian Springs Prison 95 with a hazardous waste spill. Listen to the tape or read the transcript from the N.W.T.R.B Socialogical Meeting last spring. It could be a real projectile tragedy.

Under alternate 3, page 3-32 of the summary is that 900,000 cubic meters of L.L.W. and L.L.M/W. would be stored at N.T.S. The Transporation study on page 2-14 states 1,158,963 cubic yards of the waste would come through with a potential of 26,285,796 cubic yards over the next 75 years.

4 On pages 3-30 through 40 of the Transportation E.I.S. there are bar graphs, N.V. 6 (which parallels 160) among the highest of every fatality risk from traffic fatalities to radiation induced cancer risks and the highest on hazardous index risk. If an accident happened on 95 the only access would be 160 through Pahrump.

(1)

PRIVATE CITIZEN 14 (CONTINUED)

5 N.T.S. currently stores 1,00 55 gallon drums of T.R.U. that may or may not go to W.I.P.P. If there is no W.I.P.P. will N.T.S. get another 5,000 gallon drums of transuranic waste?

6 From the recently declassified D.O.D. report the missing numbers are filled in to make up the 300 metric tons of H.L.W. that might be stored at N.T.S. If Yucca Mountain and a second repository (total $60 billion) are not built. Would the extra 150 metric tons be stored at N.T.S.?

7 There seem to be no viable plans for railroads coming to the test site from three directions. The federal government seems to have absolutely no interest in our demographics. Our unincorporated town (with no map of the boundries as they have never been surveyed by a licensed surveyer with a stamp) is as large as five eastern states. Our County Commissioners have allocated 45,000 parcels ranging in size from single parcels to 100 acres. This means that our 20,000 people today could become the third most populated town in Nevada. We have one of the largest and purest aquifers in the whole nation.

My questions are not only directed towards D.O.E. and D.O.D. and D.O.T. but to everyone in this country who is interested in the plans for N.T.S.
8 How can we take a stand against the governments total disregard for people especially the people of Pahrump and Nye county who will be impacted by these poisons?

Take the expendable people of Hanford, Washington who have been living with 55 million gallons of highly radioactive waste currently stored
9 in 177 underground tanks. If the plutonium and uranium 235 were to really go critical what would happen? This has been going on for 50 years and the characterization for 10. Cleanup would be 36 billion dollars. The government has allowed this mess to go on for almost 50 years I shudder at what they have in mind for us in Nye county.

10 Nationwide transport of this L.L.W., L.L.M.W., T.R.U. and H.L.W. will destroy our pristine county and what about the rest of the 43 states involved? We do not want what happened from a radioactive spill from Los Alamos that ended up at Cochiti Lake and polluted it with radio active
11 colloids. Why are there no colloidial studies being made when I have heard that there is a real need that is being ignored.?

12 Why don't we go to new science and reprocess and reactivate on site these dangerous elements? Nevada produces no radio active waste and yet the federal government wants to put it all here. The government knows as
13 do all of us who have been studying radio-biology that radiation can destroy our future generations. We must stop this nonsense for the preservation of our nation.

As a stakeholder I have absolutely no say about any of this. Information must get to all the people of this nation and the world about how dangerous these plans are. Please Mr. President stop it!

Sally Devlin

(2)

Sally Devlin
P.O. Box 2598, Pahrump, Nv. 890
702-727-6853

Carbite

RECEIVED MAR 1 1 1996

PRIVATE CITIZEN 15

THE DRAFT ENVIRONMENTAL IMPACT
for the NEVADA TEST SITE an
OFF-SITE LOCATIONS IN THE STATE C

Nevada Test Site EIS Hearing Comment

Mrs.

Please Enter Your Name, Organization and Address Below: Meeting –

JEFF JENNINGS — PRESS CARD
Your Name — Organization

P.O. BOX 1427, — Pahrump — NV — 89041
Street Address — City — State — Zip Code

Thank you for attending this hearing. Please use this sheet (and attachments if needed) to inform us of your written comments on this EIS.

When commenting, please indicate beside your comment the applicable issue category number from the list below. This will help us to ensure that your comment is considered in the relevant section of the EIS. You may identify additional issue categories as needed.

1.	Land Use	12.	Cultural Resources (includes American Indian Perspective)	16.	Nuclear Policies	22.	Work for Others Program
2.	Transportation			17.	Big Explosives Experiment Facility	23.	Alternative 1 - Continued Current Operations (No Action Alternative)
3.	Site Support Activities						
4.	Socioeconomics	13.	Occupational and Public Health and Safety/Radiation (includes Human Health Risk)	18.	Defense Program	24.	Alternative 2 - Discontinue Operations
5.	Geology and Soils			19.	Waste Management Program		
6.	Surface Hydrology					25.	Alternative 3 - Expanded Use
7.	Groundwater			20.	Environmental Restoration Program		
8.	Biological Resources					26.	Alternative 4 - Alternate Use of Withdrawn Lands
9.	Air Quality	14.	Environmental Justice	21.	Mandidrone Research and Development Program		
10.	Noise	15.	DOE Environmental Policies and Procedures			27.	NEPA Process
11.	Visual Resources					28.	Other

TOPIC NUMBER: 4

COMMENT (continue on back if needed):

1 Full development in harmony with Manhattan Projects I & II

Please hand this form in today or mail before May 3, 1996 to:

U.S. Department of Energy
Environmental Impact Statement
P.O. Box 14459
Las Vegas, NV 89195-8066

RECEIVED MAR 1 3 1996

PRIVATE CITIZEN 16

3-9-96

To: US Dept of Energy - Environmental Impact

Re: Downwinders in St George Utah

We have lots of evidence here in St George that Hundreds of residents were victims of the tests in Nevada.

1 Please stop the testing & don't send more US their deaths or for more cancer related problems

You wouldn't do the tests if any kind of the wind was blowing into Las Vegas!

2 There has already been too much negligence. Don't ignore our pleas to stop all tests & don't send innocent people into the area to experiment with the results!

Herman & Ferdinands
PO Box 63
St George Utah 84771

RECEIVED MAR 1 1996

Private Citizen 17

THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the NEVADA TEST SITE and
OFF-SITE LOCATIONS IN THE STATE OF NEVADA

Nevada Test Site EIS Hearing Comment Sheet

Please Enter Your Name, Organization and Address Below:

Meeting Location: PAHRUMP, NV
Meeting Date: 13 MAR 96

TONY ADKINS — Your Name
NONE — Organization
P.O. BOX 869 — Street Address
NYALA — City
CO — State
81424 — Zip Code

Thank you for attending this hearing. Please use this sheet (and attachments if needed) to inform us of your written comments on this EIS.

When commenting, please indicate beside your comment the applicable issue category number from the list below. This will help us to ensure that your comment is considered in the relevant section of the EIS. You may identify additional issue categories as needed.

1. Land Use
2. Transportation
3. Site Support Activities
4. Socioeconomics
5. Geology and Soils
6. Surface Hydrology
7. Groundwater
8. Biological Resources
9. Air Quality
10. Noise
11. Visual Resources
12. Cultural Resources (including Americans Indian Perspective)
13. Occupational and Public Health and Safety/Radiation (including Human Health Risk)
14. Environmental Justice
15. DOE Environmental Policies and Procedures
16. Nuclear Policies
17. Big Explosives Experiment Facility
18. Defense Programs
19. Waste Management Program
20. Environmental Restoration Program
21. Hazardous Research and Development Program
22. Work for Others Program
23. Alternative 1 - Continue Current Operations (No Action Alternative)
24. Alternative 2 - Discontinue Operations
25. Alternative 3 - Expanded Use
26. Alternative 4 - Alternate Use of Withdrawn Lands
27. NEPA Process
28. Other

2OFIC NUMBER	COMMENT (continue on back if needed)
5, 26	1 THE EIS SHOULD CONSIDER THE POTENTIAL OF THE NEVADA TEST SITE FOR MINERAL EXPLORATION. A REVIEW BY THE AVAILABLE GEOLOGIC DATA INDICATES THAT ECONOMIC MINERAL DEPOSITS, BOTH PRECIOUS & BASE METALS, ARE QUITE LIKELY. PARTICULARLY SINCE EXPLORATION METHODS & THE GEOLOGIC UNDERSTANDING OF MINERAL DEPOSITS HAS EVOLVED SIGNIFICANTLY FROM THE TIME THE NTS WAS CLOSED TO MINERAL ENTRY
	MINING PAYS EXCELLENT WAGES, TRAINS & EMPLOYS SKILLED WORKERS AND GENERALLY IS FUNDED BY THE PRIVATE SECTOR.
	THIS WOULD LESSEN THE NEED FOR FEDERAL FUNDING OF TEST SITE ACTIVITIES

Please hand this form in today or mail before May 3, 1996 to:

U.S. Department of Energy
Environmental Impact Statement
P.O. Box 14492
Las Vegas, NV 89193-8066

Private Citizen 18

Verbal Comment 1-800 Line

Comment Code: Private Citizen 18–1
Name: Coleman Cottrill
Date: March 27, 1996
City: Las Vegas

- [x] Telephoned
- [ ] Please call
- [ ] Returned your call
- [ ] Will call again

Comment: He opposes the Yucca Mountain Project!!

PRIVATE CITIZEN 19

1271 Town Center Drive, MS 423
Las Vegas, NV 89134
(702) 295-4925 voice
(702) 295-5223 FAX
jim_boone@notes.ymp.gov
19 March 96

Donald R. Elle
Director, Environmental Protection Division
DOE, NVO
P. O. Box 14459
Las Vegas, NV 89114

Dear Donald,

Thank you for the opportunity to comment on the draft EIS for the Nevada Test Site and surrounding areas.

I would like to draw your attention to Table 4-30 on pages 4-170 and 4-171. Several species of interest (formerly Federally Listed Category-2 Species) were not included in the table, and several species listed in the table are more widespread than noted. My data are from several sources, including personal knowledge, field guides, published accounts of the species, this draft EIS, and discussions with experts.

1 | Enclosed find changes to Table 4-30 that should be considered for the final EIS.

Sincerely,

James L. Boone, Ph. D., Ecology

PRIVATE CITIZEN 19 (CONTINUED)

Table 1. Modifications to EIS table 4-30. Species for which there were no changes are not included in this table. For the species listed in table 4-30 that required changes, upper case (X) indicates an addition and lower case (x) indicates no change. Seven species were added; no species were deleted.

Species listed as endangered, threatened, or candidates under the Endangered Species Act that may be found on the Nevada Test Site (NTS), Tonopah Test Range (TTR), Central Nevada Test Area (CNTA), Project Shoals Area (PSA), Dry Lake Valley (DLV), Eldorado Valley (EV), and Coyote Springs Valley (CSV).

species	NTS	TTR	CNTA	PSA	DLV	EV	CSV
Endangered							
eagle, bald	x	x	x	x			X
Threatened							
tortoise, desert	x				x	X	x
Candidates - Birds							
hawk, ferruginous	x	x	x	x	x	X	X
owl, western burrowing	x	x	x	x	x	X	X
tern, black	x	x	X	X			
Candidates - Mammals							
bat, allens big-eared					X	X	X
bat, big free-tailed	X	X	X		X	X	X
bat, fringed myotis	x	x	x	x	x	X	X
bat, greater mastiff					x	X	X
bat, leaf-nosed					X	X	X
bat, long-eared myotis	x	x	x	x	x	X	X
bat, long-legged myotis	x	x	x	x	x	X	X
bat, townsends big-eared	X	X			X	X	X
bat, small-footed myotis	x	x	x	x	x	X	X
bat, spotted	x	x	x	x	x	X	X
bat, yuma	X	X	X	X	X	X	X
rabbit, pigmy			x	X			
Candidates - Reptiles							
chuckwalla	x				X	X	X
monster, gila					X	X	X
Candidates - Amphibians							
toad, arizona					X	X	X

PRIVATE CITIZEN 20

STATEMENT OF PAUL MCGINNIS, NTS EIS HEARING, MARCH 26, 1996

1 Although the DOE prepared a comprehensive environmental impact statement (EIS) for the Nevada Test Site, I am bothered by what was omitted for "national security" reasons. For example, the DOE tried to obscure the existence of a classified appendix to the EIS that discusses the Lyner complex in Area 1 among other topics.[1] Without the information in the classified appendix, it is difficult for the public to determine the safety and health risks posed by some NTS projects.

2 Another project that the DOE has studied, that is omitted from the EIS, is the Air Force's nuclear rocket program originally code-named TIMBERWIND, that later became the Space Nuclear Thermal Propulsion (SNTP) program, that was notorious for having a classified EIS. This 253 million dollar program was planned for a site near Saddle Mountain in Area 25 of the Nevada Test Site.[2][3] If you want to discuss safety risks, consider the effects of a rocket explosion like that of the Space Shuttle Challenger or the Titan missiles, except with a nuclear reactor onboard.

3 Perhaps the biggest thing that the DOE has tried to conceal is their role, and the role of the Atomic Energy Commission (AEC) in the saga of the Air Force's secret airbase at Groom Lake. The EIS mentions plutonium contamination in what it describes as Area 13 of the Nellis Air Force Range Complex, and then shows maps in the EIS that clearly indicate that Area 13 is part of the Groom Lake base.[4] The northeastern part of restricted airspace R-4808N, shown in the EIS maps, forms a rectangular box on military maps, sometimes referred to as "Dreamland" by military pilots, that contains Groom Lake and its secret Air Force base.[5] The maps show that the NTS

4 supplies electrical power to the Groom Lake base and provides access to Groom Lake on 2 NTS roads, Mercury Highway and Valley Road. Although R-4808N contains an Air Force facility, this restricted airspace is controlled by the Department of Energy.[6]

AEC documents from the 1950s and 1960s have been released that reveal the role of the DOE's predecessor at Groom Lake. The Groom Lake base was originally built in the mid-1950s by the AEC's contractor REECo (Reynolds Electrical Engineering Company) under the cover name "Watertown Strip" [7] for the CIA's U-2 aircraft program. A 1957 press release about a pilot who had to make an emergency landing at Watertown Strip revealed that "the Watertown landing strip is in the Groom Lake area at the northeast corner of the Nevada Test Site."[8] The Groom Lake facility eventually became known as Area 51 Camp and was frequently referred to as such in Nevada Test Site employee bulletins in the 1960s. For example, one bulletin even provided the telephone numbers for Area 51's base commander and security office.[9]

5 By withholding information, like that described above, during a public environmental impact statement process, the DOE decreases the public's trust and violates the spirit of Secretary O'Leary's openness initiative.

References

[1] Dept. of Energy, Nevada Operations Office. Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada. Volume 1, Appendix A. DOE/EIS 0243. January 1996: page A-12.

[2] Dept. of the Air Force. Space Nuclear Thermal Propulsion Program, Particle Bed reactor Propulsion Technology Development and Validation. AD-A281 442. May 1993.

[3] Dept. of Energy. J.F. Whitbeck and T. Olsen. Preliminary study of facility options for ground testing of a Nuclear Thermal Propulsion Engine. EGG-NPD-9548 (DOE contract AC07-76ID01570). June 1991.

[4] Dept. of Energy, Nevada Operations Office. Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada. Volume 1, Chapter 4, Part A. DOE/EIS 0243. January 1996.

PRIVATE CITIZEN 20 (CONTINUED)

[5] Defense Mapping Agency. Nellis AFB Range Chart. NRCXX01. October 1988.

[6] Defense Mapping Agency. Area Planning, Special Use Airspace, North and South America. AP/1A. September 14, 1995: page 81.

[7] Atomic Energy Commission. Col. Alfred Starbird. Telex 8103 to K.F. Hertford on the Watertown Project. October 17, 1955.

[8] Nevada Test Organization, Office of Test Information. Watertown press release. OTI 57-70. July 29, 1957.

[9] Nevada Test Site. NTS Bulletin Volume IV, Number 2. January 15, 1960.

For further information, contact:
Paul McGinnis
P.O. Box 28084
Santa Ana, CA 92799
daytime phone: (714) 753-7864 ext. 294
Internet: TRADER@cup.portal.com / PaulMcG@aol.com
http://www.portal.com/~trader/secrecy.html

PRIVATE CITIZEN 20 (CONTINUED)

34090

OTI-57-70 | Nevada Test Organization
OFFICE OF TEST INFORMATION
1235 South Main Street
Las Vegas, Nevada | July 29, 1957

Telephone: DUdley 2-6350 | FOR IMMEDIATE RELEASE

A pilot who landed his small private aircraft late Sunday on the Watertown air strip within the restricted air space over the Nevada Test Site was to take off today after being detained overnight at Mercury.

The pilot is [redacted] of Redondo Beach, California, an employee of the Douglas Aircraft Company. He was on a cross country training flight from Torrance, California, to Las Vegas when he lost his way, ran low on gas, and landed at Watertown.

The Watertown landing strip is in the Groom Lake area at the northeast corner of the Nevada Test Site.

Nevada Test Organization security officials reported the incident to the Civil Aeronautics Administration, which administers the air closure over the Test Site.

-0-

PRIVATE CITIZEN 20 (CONTINUED)

COPY

TWX 8103 /PRIORITY/ | Recd. Oct. 17, 1955 11:07 AM

FROM USAEC WASHINGTON DC OCTOBER 55 161703Z

TO USAEC SPDO ALBUQUERQUE NM | 0142174

/ OFFICIAL USE ONLY/

FROM COL ALFRED D STARBIRD

TO K F HERTFORD

REFERENCE YOUR MEMORANDUM SEPTEMBER 19 CONCERNING REQUEST OF THE LAS VEGAS REVIEW JOURNAL FOR A PROGRESS REPORT ON WATERTOWN PROJECT, APPROVED RELEASE IS AS FOLLOWS:

"CONSTRUCTION AT THE NEVADA TEST SITE INSTALLATION A FEW MILES NORTH OF YUCCA FLAT WHICH WAS ANNOUNCED LAST SPRING IS CONTINUING. DATA SECURED TO DATE HAS INDICATED A NEED FOR LIMITED ADDITIONAL FACILITIES AND MODIFICATIONS OF THE EXISTING INSTALLATION. THE ADDITIONAL WORK WHICH WILL NOT BE COMPLETED UNTIL SOMETIME IN 1956 IS BEING DONE BY THE REYNOLDS ELECTRICAL AND ENGINEERING COMPANY, INCORPORATED UNDER THE DIRECTION OF THE ATOMIC ENERGY COMMISSIONS LAS VEGAS BRANCH OFFICE".

END REF IA: LPG AEC-8103

For our guidance if press queries, data additional facilities and modifications refer to the satellite installation.

UNCLASSIFIED

PRIVATE CITIZEN 21

[redacted]

DEPARTMENT OF ENERGY
ENVIRONMENTAL IMPACT STATEMENT
P.O.BOX 14459.
LAS VEGAS NEV. 89195 8066

Mr. John E. Loskot
1401 Commercial Dr.
Las Vegas, NV 89106-2009

GENTLEMEN:

BY THE TIME THAT YOU GET AROUND TO PUBLISHING YOUR STATEMENT I WILL BE 90 YEARS OLD.

AS YOU READ THE VITAL STATISTICS COLUMNS IN YOUR LOCAL NEWSPAPER YOU WILL NOTICE THAT VERY FEW OF US MEN ARE ALIVE AT THIS AGE, MOST ARE DEAD,

THIS REALITY CAUSES ME TO QUESTION THE PRUDENCE OF MY INVOLVING MYSELF IN NUCLEAR MATTERS, ESPECIALLY WHEN I DO NOT NEED TO. AND I AM JUST NOW RECOVERING FROM A STROKE, AND LET US BE HONEST AND ADMIT THAT THE OLD MAN JUST AINT WHAT HE USED TO BE,

THE REALITY IS THAT IF I WERE TO DEVELOP MY WORK WITH THE HELP FROM D, O, E, HIGH ENERGY LEVEL NUCLEAR WASTE WOULD ALL BE RECYCLED, AND CONVERTED BACK INTO URANIUM OF ISOTOPE 238 AND THERE IS NO B TIER GRADE FOR FUEL FOR THE NUCLEAR POWER INDUSTRY.

THE CONVERSION COULD AND SHOULD BE DONE AT THE NEVADA TEST SITE AND I SUGGEST THAT IF THEWORK IS TO BE DONE, THAT E, G, AND G . BE GIVEN THE CONTRACT, AS THEIR OFFICE IS NOT FAR FROM WHERE I LIVE AND THAT IS IMPORTANT TO ME AS I NO LONGER HAVE MUCH STREGNTH LEFT TO GET UP AND GO.

THE DESIGN AND ENGINEERING COULD BE DONE AT THEIR LOCAL OFFICE,

I WORKED FOR REYNOLDS BACK IN 1964 1968,

JOHN E. LOSKOT.

RECEIVED APR 0 4 1996

PRIVATE CITIZEN 22

To whom it may concern, March 20, 1996

I have a few misgivings about the article I read in the Salt Lake Tribune concerning your test sight. As a member of the Utah populace I feel an active letter to you was in order, as I hope did many others

My concerns are many, but chiefly I am worried about you apparent lack of hope in both living and nonliving matter. By that I mean because you are not interested in completely shutting down your facility, it shows that you have very little respect for humans and the land you will destroy and have obliterated already. There is already condemned land that is obviously inaccessible to humans, do we really need more land that is worthless at the hands of man? I think not. I want my grandchildren to be able to roam happily on a healthy planet. People are dying essentially at your mercy by little or absolutely no fault of their own, damaging the lives of their loved ones, and making you look like the devil's advocate.

Have you ever gone threw the pain of losing someone you love? I have, too many times. I cannot stand the thought of someone else needlessly going threw the same torture. You may think the word torture a bit extreme, but there is no word I can think of to cover all the aspects of what death feels like to the ones still living.

You are not evil people, but you are people who need to ask yourself one question: "Is money more important than human lives"? Those of you who say yes are heartless, and I hope our paths never cross. But to those who say no, you are headed in the right direction and all I can say is follow the path of life, not cruelty and death.

I can show you the way, all you must do is listen to your heart. I hope this letter was not laughed at, or made fun of. I am a humble girl, wanting the world and all Her inhabitants to be happy, safe and healthy. Thank you for your time.

Sincerely,
Amanda Beno

Amanda Beno
Wasatch Academy
Mt. Pleasant, Utah 84647

RECEIVED APR 0 4 1996

PRIVATE CITIZEN 23

Chandler McPherson
2555 D Street - Apt. E
Sparks, NV 89431-4141
(702) 331-5484

March 28, 1996

Donald R. Elle, Director
Environmental Protection Division
U.S. Dept. of Energy Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114

Dear Mr. Elle:

This is a response to the "Draft Environmental Impact Statement on the Nevada Test Site". I have carefully reviewed the document and support Alternative 3 for expanded use of the NTS. While the "Cold War" may be over, I am not convinced that scaling back the activities of the NTS as proposed in Alternatives 2 and 4 is appropriate. We are a nuclear power and need to maintain the expertise at both the National Laboratories and the NTS to be able to respond to any national defense need. Proliferation of nuclear weapons is a fact. For instance, while South Africa has dismantled its nuclear weapons program, the fact they had a successful one underlines this danger. I have concerns that weapons and weapons material security in the former Soviet Union may have contributed to proliferation. We simply cannot scale our efforts back too severely without risk.

Stockpile Stewardship properly needs some of the proposed enhancements and additions of facilities to the NTS as proposed in Alternative 3. The emphasis on low or no yield testing to ensure the safety of the stockpile, the proposed storage of surplus pits in the P-Tunnel and the continued environmental remediation at the NTS and off-site test locations should continue. I support such activities as a resident of Nevada.

I1 The Draft EIS in several places concerning Project Shoal, refers to the emplacement depth as 1350'. The AEC's "Site Disposal Report - Fallon Nuclear Test Site (Shoal)" of May, 1970, indicated that the entry shaft was mined to 1320' below the surface and that the device was finally emplaced in a 30' "buttonhook" at the end of a 1050' easterly drift. The final emplacement depth was 1211' below the surface.

Sincerely yours,

Chandler McPherson

PRIVATE CITIZEN 24

Verbal Comment 1-800 Line

Comment Code: Private Citizen 24–1

Name: Mary Shape

Date: April 10, 1996

City: Boulder City

☒ Telephoned ☐ Please call
☐ Returned your call ☐ Will call again

Comment: No nuclear waste either low- or high-level waste stored in Nevada or traveled across or on our roads or highways.

PRIVATE CITIZEN 26

Salt Lake City, Utah
April 9, 1996

Department of Energy
P.O. Box 14459
Las Vegas, NV. 89114

Dear Sirs:

I am writing to comment on what you should do with the Nevada Test Site out by Indian Springs.

My father, Roderick W. Spencer, periodically worked and lived at the site from 1955 through 1961. He eventually got cancer of the larynx. He died with radiation burns still on his ankles after walking through the dust to retrieve any salvageable materials after a bomb blast named "Eddy", "Operation Hardtack", on September 19, 1958.

My claim filed with the Radiation Exposure Compensation program, like nearly all the others, was denied..."no proof radiation caused his cancer."

I want that deadly place closed permanently with no further testing out there of any kind. I also would like a memorial erected at the entrance for all those who died of various cancers and were pushed by the wayside.

Sincerely,

Ann Spencer Powers
6660 South 2300 East
Salt Lake City, Utah 84121
(801) 943-1834

1

PRIVATE CITIZEN 25

C.O.R.E. Workshop

Name: Councilwoman Iris Bletsch
Address: 890 Fairway Dr
City, State: Boulder City, NV 89005 **Zip:**
Phone: 702-293-4747
Date: 4-8-96
Comments:

1. How much money has been spent on this EIS process - totally to date and projected by completion?
2. Discontinue transportation from other states. If it's so safe, keep it where it's generated.

If you only wish to record this as a written comment to DOE, please give to the stenographer.

☐ Check here if you wish to make a formal statement.

1-2

PRIVATE CITIZEN 27

Verbal Comment 1-800 Line

Comment Code: Private Citizen 27-1

Name: Ms. Tamara Rosta

Date: April 10, 1996

City: Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Should keep NTS open, and use NTS for other purposes and testing, not necessarily nuclear.

PRIVATE CITIZEN 28

Verbal Comment 1-800 Line

Comment Code: Private Citizen 28-1

Name: William Blockley

Date: April 25, 1996

City: Boulder City

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

1 Comment: Comments for transportation of nuclear waste through Boulder City. Suggests routing be restricted to Hwy. 95--NOT allow any nuclear waste over Hwy. 93. OK over Hoover Dam area. Hwy. 95 would have to be improved in some areas, but it does take hazard away from trucks carrying material over Hoover Dam.

2 Wants to bypass roads constructed around Las Vegas so waste is not required to be transported through highly populated areas with high traffic volumes

PRIVATE CITIZEN 29

Verbal Comment 1-800 Line

Comment Code: Private Citizen 29-1

Name: Mr. Richard Fletcher, Sr.

Date: April 25, 1996

City: North Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Votes to keep NTS open because there is plenty of research they can do on other things besides testing; there is other research they can do, and other defense work they can do.

PRIVATE CITIZEN 30

Verbal Comment 1-800 Line

Comment Code: Private Citizen 30-1

Name: Mr. Daniel Romero

Date: April 25, 1996

City: Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Does not want the NTS closed.

PRIVATE CITIZEN 31

Verbal Comment 1-800 Line

Comment Code: Private Citizen 31-1

Name: Mr. Donald R. Fletcher

Date: April 25, 1996

City: Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Wants to keep NTS open. Would like to see a combination of work at NTS, including low-level waste storage and dismantling of weapons, and would like to see it remain in a ready mode for testing.

PRIVATE CITIZEN 32

Verbal Comment 1-800 Line

Comment Code: Private Citizen 32-1

Name: Mr. Luciano Falozant

Date: April 25, 1996

City: North Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Voting to keep NTS open.

PRIVATE CITIZEN 33

Verbal Comment 1-800 Line

Comment Code: Private Citizen 33-1

Name: Ms. Fannie White

Date: April 25, 1996

City: Mercury

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Wants to keep the test site open.

PRIVATE CITIZEN 34

Verbal Comment 1-800 Line

Comment Code: Private Citizen 34-1

Name: Ms. Katherine M. Wilson

Date: April 25, 1996

City: Boulder City

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Does not want waste material brought thru Boulder City or over the Hoover Dam.

PRIVATE CITIZEN 35

Verbal Comment 1-800 Line

Comment Code: Private Citizen 35-1
Name: Ms. Bertha A. Sexton
Date: April 26, 1996
City: Las Vegas

☒ Telephoned ☐ Please call
☐ Returned your call ☐ Will call again

Comment:
- NTS remain open.
- Low-level waste come to NTS.
- Dismantling of armed nuclear devices.
- As well as what we are continuing to do now at the NTS.

PRIVATE CITIZEN 36

Verbal Comment 1-800 Line

Comment Code: Private Citizen 36-1
Name: Ms. Terry Anderson
Date: April 26, 1996
City: Indian Springs

☒ Telephoned ☐ Please call
☐ Returned your call ☐ Will call again

Comment:
- NTS stay open.
- Have low-level waste at the NTS.
- Continue to do the work we do now, and
- Dismantling of devices.

1

PRIVATE CITIZEN 37

Verbal Comment 1-800 Line

Comment Code: Private Citizen 37-1
Name: Mr. Harold D. Sanquist
Date: April 26, 1996
City: Las Vegas

- [x] Telephoned
- [ ] Please call
- [ ] Returned your call
- [ ] Will call again

Comment:

- Works at the NTS.
- Wants to see more work at the NTS.
- Wants to continue the work at NTS.
- Necessary for the country, and we need it.

PRIVATE CITIZEN 38

Verbal Comment 1-800 Line

Comment Code: Private Citizen 38-1
Name: Ms. Tracy Sanquist
Date: April 26, 1996
City: Las Vegas

- [x] Telephoned
- [ ] Please call
- [ ] Returned your call
- [ ] Will call again

Comment:

- NTS provides jobs.
- NTS is only thing in Nevada that is stable.
- Nothing finer in the state of Nevada than the NTS.
- What else are you going to do with that land that has been damaged in that way?
- NTS is stable -- keep it going for people in Las Vegas and in Nevada.

PRIVATE CITIZEN 39

Verbal Comment 1-800 Line

Comment Code: Private Citizen 39-1

Name: Dorothy Anderson

Date: April 26, 1996

City: Henderson

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: She would like someone authorized to answer questions for her regarding transportation of nuclear waste across the dam. She is opposed to this.

PRIVATE CITIZEN 40

Verbal Comment 1-800 Line

Comment Code: Private Citizen 40-1

Name: Mr. James J. McGraw

Date: April 26, 1996

City: Pahrump

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Employed at NTS for 18 years. NTS has been good for the economy and my family.
He has known about the many programs at the NTS, and he thinks there is over emphasis on nuclear testing.
Feels people who are against the NTS are against him.
Appreciates if his telephone call has any impact on maintaining the NTS.

PRIVATE CITIZEN 41

Verbal Comment 1-800 Line

Comment Code: Private Citizen 41

Name: Mr. & Mrs. William Wootan

Date: April 29, 1996

City: Boulder City

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Re: Low-level waste being transported on Highways 93 and 95, and with more concern over dangerous liquified natural gas being transported from Mexico with Mexican drivers. We don't understand why this is going to be done, and we object to it. Why is there such a cavalier attitude toward this? Trucks should be taken off this highway and run through the Willow Creek Bridge which should have been built with the money spent on the theatre and nonsense at Boulder Dam.

PRIVATE CITIZEN 42

Verbal Comment 1-800 Line

Comment Code: Private Citizen 42

Name: Ms. Patricia Dawson

Date: April 29, 1996

City: Boulder City

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Send summary only. Has home less than 1/4 mile from Highway 95 that goes through Boulder City. Traffic is very heavy on that road. There are accidents all the time. Her concern is about if there is an accident which could happen on that road, or leakage—this would effect the air and water in that area and among those homes. Homeowners are very concerned about this. St. Jude's Ranch is nearby which houses children.

PRIVATE CITIZEN 43

April 30, 1996

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114

RE: SUBMISSION OF COMMENTS ON THE DRAFT NTS EIS

Dear Mr. Elle:

Enclosed are five comments I have on the Environmental Impact Statement for the Nevada Test Site. Please transmit to me a copy of the Final EIS once it has been completed.

Jeff Brown
1508 Splinter Rock Way
North Las Vegas, NV 89031

PRIVATE CITIZEN 43 (CONTINUED)

Comment 1.. Reference page S-21 lines 7-9, 15,16, 21-26 , and table S-3 (page 4 of 7)

This applies to alternatives 1,3

Approximately 10,420 acres of previously undisturbed habitat under alternative 3 and 7,490 acres under alternative 1 are to be cleared, of which 3,015 could be desert tortoise habitat.

1 A number of plant and animal species are known to inhabit the NTS, Tonopah Test range and NAFR complex, Specifically the desert tortoise. Currently in the private and commercial sector it is required that prior to any land disturbance, a search must be done to determine if the area is inhabited by the desert tortoise. This appears not to have been accomplished by the NTS. No real specifics are identified as to how or what corrective actions will be taken to provide alternative habitat for the displaced desert tortoise (currently federally listed as a threatened species), if found to be inhabiting these sites.

Comment 2 Reference page S-22 lines 10-16 regarding air quality and climate:

Also Table S-3 (page 1 of 7) for alternatives 1,3,4

The addition of the New Solar Enterprise Zone (new land disturbance of some 2,402 acres)

2 Because there are no air monitoring stations in this area it is assumed air quality is good. In the interest of safety and the environment, I would recommend that a NAMS (National Air Monitoring site) or a SLAMS (state and Local Air Monitoring Site be situated in the project School area and the Central Test site area to determine what levels of fugitive dust

PRIVATE CITIZEN 43 (CONTINUED)

are present. These areas are subject to the same high winds as the NTS and NAFR complex. With the proposed increased activity (table S-3), the project School and Central Test site area's should evaluated for PM10 compliance as specified by the National Ambient Air Quality Standard (i.e. 150 microns per cubic meter in a 24 hour period, and 50 microns per cubic meter annual average.) for a period of one year to baseline PM10 levels.

2 cont.

Comment 3. Reference page S-30 lines 7-9.

Two off-site nuclear test sites.

For alternative 1,3

3 I would be opposed to any further nuclear testing in off-site locations whether authorized by the president or not. Although the off-site locations are not mentioned specifically, these should be included in the restoration activities described in this EIS. These sites

4 should not be used in any alternative with regard to waste management storage. These off-site locations should have all radionuclides removed and transported to NTS sites already being used for this purpose. Once the sites have been returned to pretest topology, They could then be used for environmental studies, or if the ecosystem is suitable , could be used to relocate desert tortoise displaced under alternatives 1,3

(mentioned in **Comment 1.**)

PRIVATE CITIZEN 43 (CONTINUED)

Comment 4. Reference entire EIS

alternatives 1,2,3,4

Although all alternatives have some degree of environmental impact, negative and

5 positive. I would recommend a consolidation of 2 alternatives, namely alternatives 3 and 4.

I like the socioeconomics of alternative 3 and the increased activity, but opposed to any off-site transportation of hazardous materials. Exception: to bring hazardous materials (both radionuclides and toxics) from other sites to the NTS, supporting efforts to restore

6 the off-site locations to pre-contamination state. Expand the scope of this EIS to include these sites, implement the Solar enterprise project, Possibly in the restored off site locations. Determine if the solar enterprise project could be developed in a way that

7 would allow any displaced species whether plant or animal, be introduced back into solar enterprise project lands (restored off-site locations). Under alternative 4 there is a potential for some land to be relinquished for public use, develop these lands for this use and include any lands designated for the solar enterprise project.

Comment 5. Reference entire EIS

This EIS was informative and well written, however some areas were difficult to follow. The document assumes the common person reading this document knows what the

8 current operations are at the NTS (alternative 1). A more in depth description of current operations needs to be included so the public can better assess the other three alternatives.

PRIVATE CITIZEN 43 (CONTINUED)

There is some confusion created as a person reads through the text, constantly going
9 from text to the tables. I would suggest the tables be used for purely statistics and ratios,
whereas the text could include a comparison of the alternatives. Some of this EIS seemed
biased towards alternative 3. I understand the costs involved with including any graphics
10 in a document this size, including some pictorials on some of the sites mentioned would
have made it less difficult to comprehend.

PRIVATE CITIZEN 44

23 Apr 96

DOE Personnel

Please do not reopen the Nevada Test Site for any form of nuclear testing or disposal of radioactive waste that would continue to endanger the health of people living in Nevada or the surrounding states.

Sincerely,

Julia O. Jones
120 Aspen Terrace
Park City UT 84098

PRIVATE CITIZEN 45

4840 Bruges Ave.,
Woodland Hills,
California, 91364
(818) 225-7735
24 April, 1998

TO: Mr. Don Elle, Director of Environmental Departmental Division,
United States of America - Department of Energy,
P. O. Box 14459,
Las Vegas, Nevada, 89114

SUBJECT: Transportation Routes for The Transporting and Disposal of Low Level Radioactive Waste.

Dear Mr. Don Elle - AND Associate Members of The Environmental Impact Study GROUP;

We are writing this letter - to you SIR - and to the Associate Environmental Impact Study (E.I.S.) personnel - who will and are Investigating and Author The E.I.S. Report - concerning The Ten Proposed Routes for The Transportation of Low Level Radioactive Waste - to "The DISPOSAL Test Site" or HOPEFULLY - through the STATE of Nevada. It is NOT the Destination of the Radioactive waste - that is the topic of CONCERN - although WE CANNOT IMAGINE - IN OUR "WIDEST NIGHTMARES" - WHY THE STATE OF NEVADA - WAS CHOSEN TO BE THE "TRASH CONTAINER and STORAGE FACILITY" - FOR THE REST OF THE UNITED STATES OF AMERICA. OUR OPINION IS - THAT NEVADA DOES NOT HAVE THE CONGRESSIONAL STRENGTH OR ELECTORIAL VOTES - TO COUNTER - THE ACTIONS OF "HAVING THIS RADIOACTIVE WASTE - RAMMED - DOWN OUR THROATS" - OR - UP - ANOTHER PART OF OUR ANATOMY. THE PEOPLE OF NEVADA HAD THE "CRAZY" IDEA - THAT DEPT. OF ENERGY (D.O.E.) SECRETARY - MR. BABBITT - WAS "OUR FRIEND" - OUR FEDERAL PROTECTOR - AN ENVIRONMENTALIST - AND - WOULD NEVER LET THIS HAPPEN !!! AFTER ALL - WASN'T ENOUGH OF THE STATE OF NEVADA - RUINED - BY THE NUCLEAR TESTING - ABOVE GROUND - AND - BELOW ??? THIS NEVADA LAND - RUINATION - WENT-ON - FOR - HOW MANY YEARS ??? THE DEFENSE OF OUR COUNTRY - WAS AT STAKE - SO EVERYONE DID THEIR "PART" - ESPECIALLY NEVADA and UTAH!!!! NOW - THE STATE OF NEVADA IS "SELECTED" - TO BE - THE NUCLEAR and RADIOACTIVE WASTE "DUMP" - FOR THE UNITED STATES OF AMERICA !!!! AND - TO FURTHER - "PUT SALT IN THE OPEN WOUND" - WE HAVE TO - ATTEND - DISCUSS - ASK - AND PLEAD - while WE ATTEND - GOD KNOWS - HOW MANY MEETINGS - AND LISTEN TO - HOW MANY "EXPERTS" - FOR HOW MANY HOURS, DAYS AND MONTHS - AND YES - HOW YEARS - TO HAVE - THIS RADIOACTIVE WASTE - NOT - TRANSPORTED THROUGH OUR COMMUNITIES. A U.S.-D.O.E. OFFICIAL - HAS STATED (PER THE BOULDER CITY NEWS of 4/18/1998 - PAGE ONE - FIFTH PARAGRAPH) - "LOW LEVEL RADIOACTIVE WASTE TAKES THOUSANDS OF YEARS TO BREAK DOWN BEFORE IT IS UN-HARMFUL TO HUMANS !"

PRIVATE CITIZEN 45 (CONTINUED)

AND NOW - ONCE AGAIN - THE CITIZENS OF NEVADA - AND - MORE SPECIFICALLY - THE CITIZENS OF BOULDER CITY and HENDERSON, NEVADA - ARE THREATENED - EVEN FURTHER - BY THE GOVERNMENT OF THE UNITED STATES OF AMERICA - WITH HAVING - "A CONTAMINATE DANGER - FOR THOUSANDS YEARS" - TRANSPORTED THROUGH THE STATE OF NEVADA and THESE TWO COMMUNITIES.

Facilitator Brad Benson, stated (B.C. News, 4/18/1998 - Page ONE - Second Paragraph) - that HE was disappointed with the "low turnout" (of The April 8, 1998 meeting), especially after residents Provided valuable input at a similar meeting THREE MONTHS AGO. (B.C. NEWS, 4/18/1998, PAGE ONE - FOURTH PARAGRAPH) - AGAIN MR. B. BENSON - "BACK IN JANUARY 1995 D.O.E. HELD A SCOPING MEETING AND ONE THING THAT CAME OUT WAS, MOST RESIDENTS DID NOT REALIZE A LOW LEVEL ROUTE WAS COMING THROUGH THE CITY. IT REALLY UPSET A LOT OF PEOPLE." AGAIN (B.C. NEWS, 4/18/1998, - PARAGRAPH SIX - whicH starts ON Page ONE AND ENDS ON Page THREE - TOP MIDDLE OF PAGE THREE) - ORIGINALLY the D.O.E. - DID NOT - SELECT BOULDER CITY as one of the sites for meetings - BENSON - (AGAIN) said, but several people pressured them into it. "The community made their apprehensions known and in doing so the DOE included Boulder City. EVEN - THE MAYOR of BOULDER CITY - "HIS HONOR" MR. ERIC LUNDGAARD - brought up the "lack of response as being apathy" before the last City Council meeting.

MR. DON ELLE (DIRECTOR OF ENVIRONMENTAL DEPARTMENTAL DIVISION - OF THE U.S. DEPT. OF ENERGY), YOUR HONOR - MR. MAYOR - MR. ERIC LUNDGAARD (that calls people "animals" and statements of that effect - when THE CITIZENS - OF THE B.C. COMMUNITY - EVEN DARE - TO DISAGREE - WHEN ATTENDING - ONE OF "HIS HONOR's" MEETINGS), PROFESSOR PAUL RICHITT (U.N.L.V. Environmental Studies Program), MR. BRAD BENSON - FACILITATOR (WEBSTER'a DICTIONARY states A FACILITATOR - AS ONE WHO ATTEMPTS TO MAKE THINGS - EASY or LESS DIFFICULT), and THE THIRTY or so - EXPERTS FROM THE DEPARTMENT OF ENERGY, the UNIVERSITY OF NEVADA, LAS VEGAS COMMUNITY OUTREACH AND EDUCATION (CORE) (Reference: B.C. NEWS, 4/18/1998, Page ONE, Paragraph THREE) - AND ANYONE ELSE - WHO HAS STATED AN OPINION ABOUT "THE POOR TURN-OUT - OF THE BOULDER CITY APRIL 8, 1998 CITY HALL MEETING!"

WE, - NANCY and ROY J. KASSEBAUM (LAND OWNER'a IN THE CITY OF HENDERSON, NEVADA - AND VERY SOON - IN THE FUTURE - RESIDENTS OF BOULDER CITY, NEVADA) - WOULD LIKE TO "STATE" OUR OPINIONS:
#1.: - CONCERNING THE MATTER OF "LOW ATTENDANCE" OF THE D.O.E. MEETINGS. #2.: - THE TEN PROPOSED TRANSPORTATION ROUTES OF LOW LEVEL RADIOACTIVE WASTE - THREE OF WHICH - ARE PROPOSED TO TRAVERSE THROUGH THE COMMUNITIES OF BOULDER CITY - AND/OR - HENDERSON, NEVADA.

PRIVATE CITIZEN 45 (CONTINUED)

OPINION NUMBER ONE - CONCERNING THE MATTER OF "LOW ATTENDANCE" OF THE D.O.E. "ROUTE" MEETINGS. THIS OPINIONATED REPLY IS PRIMARILY DIRECTED TO THE GENTLEMEN MENTIONED IN THE NEXT TO LAST PARAGRAPH - ALTHOUGH NOT CONSTRUCTIVE - IT IS "FOOD FOR THOUGHT". Did it ever occur to ANYONE OF YOU - WHY THERE IS APATHY and POOR ATTENDANCE - concerning These Recent (Before Referenced) Meetings ??? As BRIEFLY mentioned before - LOOK BACK AT THE HISTORY OF THE STATE OF NEVADA - JUST from WW II - to PRESENT DAY - INCLUDING MEETINGS.

THE STATE of Nevada has been The United States' "DUMP" - as far as ANYTHING EVEN REMOTELY CONCERNING - NUCLEAR - Be it TESTING (Above or Below the surface) - OR NOW - DISPOSAL of LOW Level Radioactive "WASTE" !!!! HOW MANY OF THESE TYPES OF FEDERAL, CONGRESSIONAL, STATE, CITY or COMMUNITY MEETINGS HAVE BEEN HELD - JUST SINCE WW II - ON THESE VERY SUBJECTS and CONCERNS ?????? DID THESE MEETINGS - THAT SHOWED THE NEVADA CITIZENS "CONCERNS","WORRIES" AND "DISPLEASURES" - DO ANY GOOD ????? HOW MUCH OF THE TOTAL - ACREAGE OF THE TOTAL - LAND MASS of the STATE OF NEVADA IS NOW - UNDER CONTROL OF - OR OWNED - BY THE UNITED STATES GOVERNMENT ????? DID THE "CONCERNS" and "MEETINGS ATTENDED" - OF THE PAST and PRESENT CITIZENS OF NEVADA - REALLY - MAKE A DIFFERENCE ????? WHEN A NUMBER OF B.C. CITIZENS - DISAGREED WITH MAYOR E. LUNDGAARD - OVER A "LOCAL" MATTER - THEY WERE CALLED "ANIMALS" - OR WORDS TO THAT EFFECT !! IF YOU WERE or ARE - A CITIZEN OF THE STATE OF NEVADA - WOULD - YOU - ATTEND - MORE - OR ANY - OF "THESE MEETINGS" - GIVEN THE PAST HISTORY - OF THE RESULTS OF THESE MEETINGS - "CHAIRED" BY and FOR the U.S. Government, STATE Government or CITY and - THEIR - PROPOSALS and "MATTERS"????? OR WOULD YOU "JUST STAY AT HOME" - AND WATCH YOUR "FORNICATION" - OVER THE T. V.??? BECAUSE OF THE PAST HISTORY - OF ALL OF THESE MEETINGS - HAS SHOWN - THAT - YOUR - CONCERNS (and in B.C.'S recent case) - OPINIONS - ARE INTERFERING WITH THE DECISIONS - THAT HAVE - ALREADY MADE !!! BUT-DO YOU KNOW WHAT - THE PUBLIC SERVING - T.V. STATION and EVEN THE UNITED STATES GOVERNMENT D.O.E.(Chairing these meetings) - DOES NOT CARE ENOUGH - TO INSURE - THAT THESE "VITAL" and "CONCERNING" MEETINGS - HAVE BROAD-CAST AUDIO SOUND - FOR THESE - "VITAL MEETINGS" - SO THAT "THEY" COULD BE SEEN and HEARD BY THE DISABLED or SHUT-IN's - AND/OR THE CONCERNED CITIZENS - WHO - NOW - PREFER TO TAKE "THEIR VERBAL ANAL-FLOSS and EVENTUAL SANDY FORNICATION" - AT LEAST - IN THEIR EASY CHAIRS AT HOME !!!! LOOK AT THE PAST HISTORY - AND - THINK - HONESTLY - ABOUT THE RESULTS - AND THE NEVADA LAND OWNERSHIP and WHO IS GETTING THE "DUMP" RESULTS !!!!!! I SHALL NOW INDICATE and "POINT-OUT" - AGAIN - JUST FROM THE MEETINGS - MENTIONED - IN THE B.C. NEWS dated 4/18/1996 (THE ARTICLE by MR. ROY THEISS ON "WASTE TURNOUT LOW") - THAT D.O.E. MEETINGS BACK IN JANUARY, 1995, THE SIMILAR MEETINGS - THREE MONTHS AGO AND THE APRIL 8,1996 MEETING - ALL REFERENCED OPINIONS THAT WERE STATED - TO THE EFFECT - "THE COMMUNITY MADE THEIR APPREHENSIONS KNOWN" AND "IT REALLY UPSET A LOT OF PEOPLE" AND EVEN THE B.C. MAYOR - STATED AT THE CITY COUNCIL MEETING "WE TAKE THEIR ADVISE VERY SERIOUSLY" (IS IT CONTRACT RENEWAL TIME - ALREADY ???).

PRIVATE CITIZEN 45 (CONTINUED)

THE POINT - I AM INDICATING - IS - THE PEOPLE OF THE COMMUNITIES OF BOULDER CITY, LAS VEGAS AND EVEN ST. GEORGE - HAVE - MADE - THEIR OPINIONS KNOWN - AND THAT IS - THEY ARE VERY UPSET - WITH - ANY PROPOSED LOW LEVEL RADIATION WASTE TRANSPORTATION ROUTE - THAT GOES THROUGH - OR EVEN - NEAR - THE COMMUNITIES OF HENDERSON AND/OR BOULDER CITY - TO OBTAIN THE "DUMPS" DESIGNATED FOR OL' NEVADA. THAT IS PRETTY CLEAR - IS IT NOT ??? EVEN - WE - CAN COMPREHEND "THAT MUCH" - FROM THE B.C. News of 4/18/1996 !!!! WHY ARE THESE MEETINGS - EVEN BEING CONDUCTED - GIVEN THE PAST HISTORY OF THE STATE OF NEVADA - OR IS IT "MEETING TIME" - TO CALL FOR A BOWL AND PITCHER OF WATER - IN ORDER - TO "WASH MY HANDS OF THIS ENTIRE MATTER ???"

OPINION NUMBER TWO - (a.): THESE ARE MY WIFE'S AND MY OPINIONS - CONCERNING - THE PROPOSED - TEN LOW LEVEL RADIOACTIVE WASTE ROUTES. THE B.C.NEWS ARTICLE STATED THAT - TWO PROPOSED ROUTES WOULD TRAVEL OVER HOOVER DAM AND ONE PROPOSED ROUTE FROM CALIFORNIA GOES ALONG LAKE MEAD DRIVE IN HENDERSON NEVADA. THE ARTICLE FURTHER STATES - THAT THE D.O.E. HAS "SUGGESTED" - THREE ROUTES - THAT BY-PASS BOULDER CITY. WHY IS THERE A MEETING - OR EVEN A QUESTION CONCERNING - ANY - OF THE PROPOSED ROUTES - WHEN - ANY - OF THE SAFETY AND WELL-BEING - OF - ANY - POPULATED COMMUNITY IS CONCERNED ???????? ESPECIALLY - WHEN - THREE - D.O.E. SUGGESTED - ROUTES - BY-PASS BOULDER CITY - AND - I PRESUME - NEIGHBORING HENDERSON, NEVADA ????????????????

MR. D. ELLE - WAS QUOTED AS STATING - "THERE IS A CERTAIN RISK WHEN GOING THROUGH THE COMMUNITIES" (WITH LOW LEVEL RADIOACTIVE WASTE TRANSPORTATION). MR. D. ELLE FURTHER STATES - "BUT THE CHANCE OF AN ACCIDENT HAPPENING ARE VERY LOW", WHEN and WHERE - HAS THE AMERICAN PUBLIC "HEARD" THAT STATEMENT - BEFORE ?? WAS IT WHEN NUCLEAR REACTORS WERE FIRST PUT "ON-LINE" - ALONG THE EAST COAST - OR - WAS IT FROM RUSSIA - BEFORE OR AFTER - KIEV - AND THE "ACCIDENT" - THAT IS STILL - KILLING "SICK" PEOPLE, ANIMALS AND EVEN INSECTS - UP TO 60 RADIUS MILES AWAY FROM "THE ACCIDENT" SITE ??? OR BETTER STILL - LET'S LOOK AT THE ACCIDENT RATE - OF TRUCKING - THAT IS - LOCAL - OR IN CALIFORNIA - OR ANYWHERE - AND - THEN - TRY TO CONVINCE - ANYONE - THAT THE CHANCE OF AN ACCIDENT HAPPENING - IS VERY LOW !!!! ONLY - IN THIS CASE - IT COULD - AND WOULD INVOLVE - LOW LEVEL RADIOACTIVE WASTE - THAT COULD "ENTER" and/or "BE ACCIDENTLY - DEPOSITED" - IN ANY NUMBER OF COMMUNITY FACILITIES - FROM ROADS(minimum), WATER SUPPLY, ELECTRICAL SERVICE and - EVEN - TO THE - AIR - THAT IS BREATHED.

MR. D. ELLE AND MEMBERS OF THE E.I.S. REPORT COMMISSION - MAY I INDULGE IN A "WHAT-IF" ?? LET'S INDULGE IN THE PREMISE - THAT ONE OF THE FINAL SELECTED AND APPROVED TRANSPORTATION ROUTES - GOES OVER THE HOOVER DAM. LET'S FURTHER INDULGE - AND STATE THAT AN ACCIDENT OCCURRED ON HOOVER DAM AND INVOLVED A LOW LEVEL RADIOACTIVE WASTE TRANSPORTATION VEHICLE.

PRIVATE CITIZEN 45 (CONTINUED)

LET'S FURTHER STATE - THAT AS A RESULT OF THE ACCIDENT - ANOTHER
"ACCIDENT" OCCURS - AND RADIOACTIVE WASTE, DIRT OR CONSTRUCTION DEBRIS
1 - ENTERS THE WATERS OF LAKE MEAD AND/OR THE INTERNAL OPERATIONS OF THE
GIGANTIC HOOVER DAM - ELECTRICAL GENERATING FACILITIES. THIS IS THE
SAME RADIOACTIVE WASTE MATERIAL THAT HAS BEEN QUOTED AS "TAKING
THOUSANDS OF YEARS TO BREAK DOWN - BEFORE IT BECOMES UNHARMFUL TO
HUMANS !!!" HOW MUCH - AREA - ALONE - WOULD BE FURTHER CONTAMINATED ?
A SIXTY MILE RADIOACTIVE RADIUS - COVER - FOR - ALL - OF LAKE MEAD -
AND - THE RIVERS - ABOVE AND BELOW - THE "LOW ACCIDENT RISK" -
"CONTAMINATED" WATERS?? HOW WOULD THIS RADIOACTIVE WASTE - EFFECT THE
2 ELECTRICAL SYSTEMS OF HOOVER DAM - THAT SUPPLIES ELECTRICAL POWER TO
AN AWFUL LOT OF THE WESTERN UNITED STATES ?? I BELIEVE ENOUGH "WHAT-
IF'S" - HAVE BEEN STATED - TO INDICATE THAT - ANY - WASTE TRANSPORTA-
TION ROUTE OVER HOOVER DAM AND THROUGH THE COMMUNITY OF BOULDER CITY -
HAS TO CONSIDER - THE ABOVE - "WHAT-IF" !!!! AS PREVIOUSLY STATED -
ANY - WASTE MATERIAL TRANSPORTATION ROUTE THAT ENDANGERS - ANY -
COMMUNITY - EVEN WITH THE - REMOTEST - "WHAT-IF" - SHOULD BE DISCARD-
ED, DISAPPROVED AND STATED - AS BEING DISAPPROVED "OF" IN - NO UNCER-
TAIN TERMS - TO - THE - OR - ANY - RADIOACTIVE WASTE TRANSPORTATION
CONTACTED CONTRACTOR - IN HIS CONTRACT - AND "STAMPED UPON HIS
BRAIN"!! WE FEEL THAT - THIS -AND - ANY - AND - ALL "RADIOACTIVE
WASTE ENDANGERMENT STATEMENT PERTAINING TO - ANY POPULATED COMMUNITY -
MUST BE STATED AND AGREED TO - IN - ANY WRITTEN AGREEMENT OR CONTRACT
- WITH ANYONE - OR ANY - CONTRACTOR - THAT EVEN - REVIEWS - THE
CONTRACT FOR THE LOW LEVEL RADIOACTIVE WASTE TRANSPORTATION "JOB" !!!

OPINION NUMBER TWO - (b.): - CONCERNS THE PROPOSED ROUTE FOR
THE TRANSPORTATION OF RADIOACTIVE WASTE - FROM CALIFORNIA - THAT GOES
ALONG LAKE MEAD DRIVE IN HENDERSON". ONCE AGAIN - WE WILL STATE - THAT
WE ARE UNCOMPROMISINGLY - AGAINST - ANY - AND - ALL - PROPOSED ROUTES
THAT WILL CARRY - ANY - AND EVEN - "AN EMPTY RETURN LOAD" - AND/OR -
EVEN ONE MICRON OF A SPECK OF LOW LEVEL RADIOACTIVE WASTE - THROUGH -
ANY - AND ALL - POPULATED COMMUNITIES - OF ONE PERSON OR MORE !!!!!!
ESPECIALLY WHEN THE D.O.E. - HAS SUGGESTED - THREE ROUTES THAT BY-
PASS BOULDER CITY. THESE THREE BY-PASS ROUTES - ALSO MUST - INCLUDE -
HENDERSON, NEVADA - ESPECIALLY THE NEWLY POPULATED AND EXPLODING
HOUSING and POPULATION - ALONG LAKE MEAD DRIVE - FROM I-15 (TO THE
WEST) and AT LEAST 10 MILES PAST or EAST of the BOULDER CITY HIGHWAY -
THAT TRAVERSES HENDERSON, NEVADA. HAS - ANYONE - TOLD THE D.O.E.
PERSONNEL - AND/OR - THE E.I.S. PERSONNEL - AND ESPECIALLY MR. DON
ELLE - ABOUT THE "ACCIDENTAL" - CHEMICAL CLOUD - THAT - "NEVER WOULD
HAPPENED" - BUT - DID HAPPEN - TO HENDERSON NEVADA ?? THIS CLOUD - NOT
ONLY - HAPPENED - BUT - "DRIFTED" - SOUTH - BY WIND CURRENTS - FROM
IT'S ORIGIN (NEAR THE INDUSTRIAL RAILROAD TRACKS) (JUST NORTH OF LAKE
MEAD BLVD.). THERE ARE "VARYING" "STORIES", STUDIES" - AND "RESULTS" -
AS TO "THE CLOUD"s TOXICITY" AND - ALSO - AS TO "THE EFFECT THAT THIS
CLOUD - HAD ON THE TOWN'S - POPULATION - OF WHAT IS NOW CALLED -
HENDERSON, NEVADA.

PRIVATE CITIZEN 45 (CONTINUED)

WE FEEL, WE DO NOT HAVE TO INDULGE IN FURTHER - "WHAT-IF's" CON-
CERNING AN "ACCIDENT GENERATED" LOW LEVEL RADIOACTIVE WASTE - CLOUD -
OF TRANSPORTED DIRT OR CONSTRUCTION DEBRIS AND IT'S "EFFECT" - ON THE
EVER EXPANDING POPULATION (ALONG LAKE MEAD DRIVE) - ESPECIALLY FROM I-
15, THROUGH GREEN VALLEY and HENDERSON - AND - THE POSSIBILITY THAT IT
COULD REACH LAKE MEAD AND/OR BOULDER CITY, NEVADA - ALSO.

ANOTHER QUESTION - CONCERNING THE TRANSPORTATION OF THE LOW LEVEL
3 RADIOACTIVE WASTE ??? HOW LONG OF A TIME PERIOD - IS THIS TRANSPORTA-
TION OF THE LOW LEVEL RADIOACTIVE WASTE - SCHEDULED - FOR OPERATION ??
SPECIFICALLY IN DAYS, WEEKS, MONTHS AND YEARS ???

ANOTHER QUESTION - WHAT "ABSOLUTE" "TOTAL" - SAFEGUARDS - ARE
SPECIFICALLY "CALLED - OUT" IN THE RADIOACTIVE WASTE TRANSPORTATION
CONTRACT ??? IS THERE AN INDEPENDENT "BONDED" QUALITY ASSURANCE -
VEHICLE AND SAFETY INSPECTION CONTRACTOR - THAT IS CONTRACTED -
ENTIRELY SEPARATELY - FOR THE DAILY "INSPECTION" and CERTIFICATION -
4 OF - ANY - AND - ALL - VEHICLES - AS TO THEIR OPERATION - AND - LEAK-
PROOF - SAFETY STATUS ?? SUCH AS - "PROPER" BRAKING SYSTEMS, HEAD AND
RUNNING LIGHTS OPERATION AND ADJUSTMENT, LOAD WEIGHT VERIFICATION - AT
A MINIMUM OF - THREE - SEPARATE WEIGHT VERIFICATION STATIONS - FOR
EACH TRIP - AND - EACH WAY ?? ADDITIONAL ITEMS - SUCH AS EACH VE-
HICLE's TIRE TREAD - THICKNESS - AND - TIRE SAFETY STATUS - FOR EACH
TRIP - EACH WAY ?? THESE ARE - "JUST A MINUTE PORTION" - OF SOME OF
THE SAFETY ITEMS - THAT - MUST BE - "AGREED-TO" - AND STRICTLY ADMIN-
ISTERED - FOR EACH VEHICLE - AND EACH ONE-WAY "TRIP" - AT - THE
FEDERAL, STATE AND COMMUNITY LEVELS !!!!

ANOTHER QUESTION - HOW ARE THE VEHICLE'S STORAGE FACILITIES - FOR
5 THE RADIOACTIVE - LOW LEVEL - WASTE - CONTAINMENT - BEING VERIFIED AND
INSPECTED FOR EACH WAY OF EACH TRIP ?? WHETHER "LOADED" OR "NOT-LOAD-
ED ?? AS WE ARE - ALL - "AWARE OF" AND IN FACT - ANYONE - THAT HAS
TRAVELED - ANY ROAD - IN NEVADA - OR ANY OTHER STATE - AND/OR - IN
FACT - ANY TOWN OR CITY STREET OR ROAD - HAS BEEN - "SPATTERED"
"PELTED" AND OTHERWISE - UNACCEPTIVELY "RECEIVED" - DEBRIS THAT - ANY
TRANSPORTATION VEHICLE - WAS OR IS - CARRYING - BOTH - "FULL" AND
ESPECIALLY "EMPTY" "LOADS" - BE "IT" - DISPLACED - AIR - OR GRAVEL -
OR DIRT "VAPOR" - THAT WAS "SENT" - JUST FROM - THIS VEHICLE's OPERA-
TION and "MODUS OPERANDI".

ANY - WASTE OR DEBRIS TRANSPORTATION VEHICLES - EVEN IF THEY ARE
"SO-CALLED" COVERED - OR - THE LOAD IS SO-CALLED "CONTAINED" - HAS
"LOST PART OF and SOMETIMES - ALL - OF IT'S WASTE OR DEBRIS - CARGO -
BECAUSE OF THE VIBRATION, STRESS AND BREAKDOWN OF THE ATTACHED and
ASSOCIATED WASTE OR DEBRIS - STORAGE CONTAINMENT FACILITY - ON - ANY -
OF THESE TYPES OF VEHICLES.

PRIVATE CITIZEN 45 (CONTINUED)

6 WHAT - ABSOLUTE - SAFEGUARDS - FOR THESE ABSOLUTE - QUALITY INSPECTIONS AND ONE-WAY TRIP - VERIFICATION SAFEGUARDS - HAVE BEEN INSTITUTED AND CONTRACTUALLY GUARANTEED - TO INSURE AND PREVENT - ONE MICRON - OF ONE SPECK - OF LOW LEVEL RADIOACTIVE WASTE - THAT IS POTENTIALLY "FATAL" - FROM LEAVING THESE TRANSPORTATION VEHICLES - AND - CONTAMINATING - ANY - AND - ALL VEHICLES - WITHIN IT'S TRAVELING AND/OR TRAVELED PROXIMITIES ??? THESE GUARANTEES - SHOULD - ALSO - SPECIFY - AND - INCLUDE - ANY MICRON - OF A SPECK - OF DIRT, MATERIAL - OR - ANYTHING - THAT COULD, WOULD AND "DOES" - STICK, WEDGE AND IMBED - IT'S SELF - IN THESE TRANSPORTATION VEHICLES' TIRES - AND - UNDERCARRIAGES. THESE - ALSO - POTENTIALLY "FATAL" - "OBJECTS" - ARE LATER - DISMISSED and/or CENTRIFICALLY "THROWN" FROM THESE - OR - ANY VEHICLE !!! DO "WE" NEED - RADIOACTIVE - "THOUSANDS OF YEARS - ACTIVE - OR "NOT" - PARTICLES - OF ANY KIND - BEING "ACCIDENTLY" - "THROWN-AT" OUR PERSONAL VEHICLES - OR - "PLACED" - ON - OR NEAR - ANY TRANSPORTATION ROUTE - OF - ANY - STATE'S - OR - COMMUNITIES - TRANSPORTATION ROUTES - WHETHER PAVED OR NOT ??????

7 NEXT QUESTION - HAVE ANY SAFEGUARDS OR VERIFICATION INSPECTIONS - BEEN CONTRACTUALLY INSTITUTED - THAT GUARANTEES - THAT THE WASTE MATERIAL BEING TRANSPORTED ON - A - PARTICULAR "LOADED" - TRANSPORTATION VEHICLE - AND/OR - IN A PARTICULAR - THE VEHICLE'S CARGO - HAS BEEN INSPECTED AND VERIFIED - TO BE - AT A SPECIFIC LEVEL - OR UNDER - A SPECIFIED PRE-DETERMINED - STANDARD - FIGURE - OR - TRANSPORTABLE AMOUNT - OF - SO MANY RADIATION - CURIES" ???

8 YET - ANOTHER QUESTION - WILL - OR - MAY - THESE TRANSPORTATION VEHICLES - OF THIS LOW LEVEL RADIOACTIVE WASTE - BE IDENTIFIED - WITH "SPECIAL" MARKINGS - AND - COLORS - AND LETTERING - THAT STATES - THAT THESE VEHICLES ARE TRANSPORTING LOW LEVEL RADIOACTIVE WASTE - AND THAT 50 YARDS OF DISTANCE - SHOULD - AND MUST BE - MAINTAINED - AT ALL TIMES - IN ORDER TO MAINTAIN HUMAN HEALTH - AND - SAFETY ?? I WOULD FURTHER REQUEST - THAT THESE RADIOACTIVE WASTE TRANSPORTATION VEHICLES - BE "EASILY" AND UNIQUELY - VISIBLY - IDENTIFIED - SO THAT THEIR "SPECIAL" MARKINGS, COLORS AND LETTERING - CAN BE "SEEN" AND IDENTIFIED - FROM A 20/20 VISION DISTANCE - OF ONE HUNDRED YARDS (OR THREE HUNDRED FEET) DISTANCE - AWAY.

9 EVEN IF THESE - ABOVE REQUESTS, COMMENTS and QUESTIONS - CONCERNING SAFEGUARDS, INSPECTIONS, VERIFICATIONS AND SAFETY - GUARANTEES ARE "COMPLIED-WITH" - WHAT ASSURANCES CAN BE "INSTALLED" - THAT - ARE - AND WILL BE INSTITUTED - TO INSURE - THAT - ALL - OF THESE SAFEGUARDS WILL BE GUARANTEED - FOR EACH ONE-WAY PORTION OF EACH WASTE TRANSPORTATION JOURNEY OR TRIP ?? WE - ARE ESPECIALLY CONCERNED - WHEN THE TRANSPORTATION VEHICLES, DRIVERS AND SAFEGUARD INSPECTORS - BECOME "VETERANS" - AND COMPLACENT - WITH THEIR INSPECTIONS AND CONTRACTUAL SAFETY REQUIREMENTS - MONTHS - OR YEARS - AFTER - THE OPERATION COMMENCES !!

PRIVATE CITIZEN 45 (CONTINUED)

Mr. Don Elles, and/or your Associates - I hope - you have made-it" - this far - in this letter - SO THAT I MAY EXPRESS MY "THANKS" - concerning - THIS POTENTIALLY "LIFE-THREATENING" "DEADLY" TRANSPORTATION WASTE "PROBLEM" - AND - YOUR Assistance, Help and Concerns - that appeared - in print - to be Very Sincere !!

WE ARE ESPECIALLY AWARE - THAT YOU ARE TRYING TO "SELL" - THE PEOPLE OF NEVADA - AT THIS MOMENT IN TIME OF THIS OPERATION !! WE THEREFORE ARE "REQUESTING" - VERY POLITELY - YET - VERY STRONGLY - THAT THESE BEFORE MENTIONED GUARANTEES and - ALSO - ESPECIALLY - THE THREE COMMUNITY "BY-PASS" ROUTES and THE SAFETY GUARANTEES(THAT WERE ASKED IN THIS LETTER - IN THE FORM OF A QUESTIONS, COMMENTS AND STATEMENTS) - BE ABSOLUTELY - INSTITUTED !! THEIR INSTALLATION INTO THIS LOW LEVEL RADIOACTIVE WASTE TRANSPORTATION OPERATION - WILL MINUTELY - OR - PARTIALLY "HELP" - SO THAT THESE - ABSOLUTE - MINIMUM - SAFETY STANDARDS AND GUARANTEES - WILL - AID - AND PARTIALLY - INSURE - THAT THE TRANSPORT OF THIS - LOW LEVEL - SIGHTLESS, ODORLESS - SILENT, FATAL AND DEADLY MATERIAL - CANNOT AND WILL NOT - CAUSE - ANY OF THE "ACCIDENTAL OCCURRENCES AND/OR MISHAPS" - THAT HAS - "ACCOMPANIED" - THIS TYPE OF MATERIAL AND IT'S "HANDLING" - SINCE IT's INCEPTION !!! - WE WILL NOT EVEN MENTION - IT's USAGE AND "OCCURRANCES" - for AT LEAST ~~THIRTY YEARS~~ !!! THE LAST THIRTY YEAR TIME PERIOD !!!

THANK YOU - AGAIN - FOR YOUR - PRINTED COMMENTS, CONCERNS and the COMMUNITIES - RECOGNITION - OF YOUR - OFFICIAL - HELP, CONCERNS AND EFFORTS - CONCERNING - THIS LIFE AND HEALTH - THREAT - TO OUR "FUTURE" RESIDENCE AND HOME !!!

SINCERELY,

Nancy and Roy Kassebaum

NANCY and ROY J. KASSEBAUM
4840 Bruges Ave.,(FOR THE TIME BEING)
Woodland Hills, Calif., 91364
(818) 225-7735

P.S.- DON'T - WE - HAVE - ENOUGH - NATURAL - DISASTERS - SUCH AS EARTHQUAKES, BLIZZARDS, TORNADOES AND NEVADA's HISTORY FLASH FLOODS ?? DOES - MANKIND - AND SPECIFICALLY - THE TRANSPORTATION OF LOW LEVEL RADIOACTIVE MATERIAL and/or WASTE - THROUGH - ANY - POPULATED COMMUNITY - HAVE TO BE - ADDED - TO THIS - ALREADY - TOO LONG - LIST - OF CATASTROPHIC OCCURRANCES ?????

PRIVATE CITIZEN 46

Comments submitted by Connie Simkins, P.O. Box 333, Panaca, Nevada 89042, private citizen
April 23, 1996
Nevada Test Site Environmental Impact Statement
NTS EIS draft Volume 1, Appendix I Transportation Study January 1996

Transportation and all of its issues are of vital concern to rural Nevadans, especially those in Lincoln County which is under consideration for both truck traffic, heavy haul route, or rail shipments, possibly a new rail route here. Routings, options, management of shipments, incident risks, accident risks, and related plans bring opportunities and challenges to those living in rural Nevada.

Page 2-3 Stakeholders issues, Table 2-1 line 15

1 I question the wisdom and thoroughness of any study meeting done on Lincoln County issues and stakeholders that is held in Las Vegas. The other communities of Henderson, Boulder City, Goldfield, Tonopah, and Ely each had meetings in that particular community.

2 Page 3-10 Line 30 Waste Definitions is the only place I find reference to high level waste. This brings out a major shortcoming of this entire EIS. The lack of consideration or inter-relationships between current programs at NTS, expanded programs at NTS, no programs (shutdown) at NTS, and the proposed Yucca Mountain Waste Repository program.

3 I understand for political reasons the two EIS have distanced themselves from each other. I don't think this is a realistic approach. The two programs DO AFFECT each other. The sheer size and scope of operations of Yucca will mean many changes in how regular operations at NTS are conducted.

4 Pages 3-14 through 3-23 detail the ten routes being considered to take waste to NTS. IF Yucca mountain is developed, they will probably have a route that will take the waste around the Las Vegas valley somehow, not through Interstate 15 - 95. It is not reasonable to assume Yucca does not exist for this reason. The roads or rails (whichever is chosen) will be upgraded and could certainly handle all other types of waste going to NTS, including the Yucca waste.

5 Pages C-137 expanded use truck routes - and Pages C-141 through C-150 traffic fatality risks along routes could reflect a variety of changes downward in numbers and hazards if traffic is routed outside Las Vegas valley, as I think the political pressures will mandate as this process is

PRIVATE CITIZEN 46 (CONTINUED)

5 (cont.) finalized. Anytime you can keep hazards, risks, accidents away from one million plus people in one valley, you make things safer for the voters who elected you.

The most serious fault of this EIS I find is mentioned in the Transportation meeting comments on pages D-4 and 5, starting with Number two: "not integrated yet with Yucca Mountain". Basically what is says is first DOE said the Yucca EIS WOULD CONTAIN an integration of all transportation issues - nuclear and other wastes - in the Yucca EIS now being prepared. After the meeting 4-20-95 (and I quote) "Following the preparation of this response, a meeting was held with representatives of Yucca Mountain Site Characterization projects Office

6 and a decision was made NOT TO commit Yucca Mountain to consider Cumulative impacts associated with NTS waste shipments. The DOE will consider cumulative impacts; however, Yucca Mountain may not bethe organization that does this work.

If not now, WHEN, If not this EIS - WHO? WHAT? WHEN? WHERE? WHY? Serious Serious breach of public confidence going on here. To prepare an EIS that does not include all

7 current NTS activities, future uses, closure and cleanup, Yucca Mountain project - at whatever level Congress decides to mandate, plus the Nellis Complex Range activities, is a pure waste of time and effort plus public money.

Technical correction needed: Rail Access study page F-2 and F-3. Names given to places do not make sense. They don't line up. If you go from Crestline to Sheep to Panaca to Condor

8 Canyon makes no geographical sense at all. I am familiar with the routes suggested as much as ten years ago for this rail route by Lincoln County Commissioners and this is NOT it!
Volume I, Appendix A pages A-95 through A-102

There is a "backroad" into NTS through western Lincoln County. It is commonly called "The Back Road" by local residents who use the road to commute daily to work at NTS. For

9 years we have had promises from Senators and from US Air Force that this dirt road would be improved to enhance safety and insure all weather access and save on wear and tear of resident's vehicles. Several years ago the Air Force did pay to have parts of it graveled. Lincoln County would like to see paving put into the planning process for this road. Our county commissioners have continued to mention this in meetings and negotiations with DOE and Air Force and NTS contractors. We want to keep this "on the record".

PRIVATE CITIZEN 46 (CONTINUED)

Volume I, Appendix E pages E-5 through E-8

Section E.2.2.2 Off-site traffic, Page E-8

10 About 50 Lincoln County residents commute daily onto NTS via the "Back Road". While this is a small percentage of the whole, we feel it should be documented in any study discussing environmental impacts.

Draft EIS NTS January 1996 "Summary"

11 I believe the summary booklet and the entire EIS would mean more to the public and be easier to read, understand, and move around in IF the "Reader's Guide" to the USDOE Draft EIS NTS was placed at the FRONT of the summary booklet, instead of in the very back. This helps citizens understand what this EIS is and how to find out what they are interested in.

Page S-6 discussion begins about alternatives 1 through 4

Alternative 1 states, in part, Stockpile tests for nuclear weapons readiness - "would be conducted on Pahute Mesa or on Yucca Flat". This convinces me that the balance of the NTS could be planned as useful for expanded uses alternative 3. Alternative 3 is our preferred plan of action. Make careful priorities, don't destroy any animal or plant life, but put Man at the top of the priority - his survival - his health - his gainful employment - and the national good produced when he works on projects at NTS which benefit the general population - such as the solar energy projects suggested and other expanded future uses which provide science and technology a chance to improve the quality of life for American people.

Affected environments -

Pages S-12 and 13

12 Line 14 on page S-12 - correct as written but incomplete. NTS is in Nye County. But we must add of Area 13 - see figure S-1 on page S-2 in this volume. It clearly shows area 13 straddling the line.

Now the big subject no one is supposed to talk about - Area 51. It is there. People work there. Operations are taking place. Environment is affected. I know it is secret operations, but the activities are there and they are affecting everything - people - businesses- environment - future uses of area.

Over the past 20 years or so the Area 51 has been expanded, the Air Force claims for

PRIVATE CITIZEN 46 (CONTINUED)

security reasons. In fact what they are doing is taking up all the mountain tops, so the public cannot get on top of the mountain and look at what is going on in 51. This "taking of view shed" concept is dead wrong in my book. The Nevada Division of State Parks has tried it in Lincoln County to get control of the water but it did not work. Leave "view shed concept" out of all plans

13 and future projects at NTS. More than 95,000 acres have been withdrawn from public use to service the "view shed" at Area 51. Wrong, wrong, wrong! Unnecessary!

14 S-13 paragraph about Coyote Spring Valley contains innocurate mileage distance information. It is not a part of a designated wilderness management area where the site would be built. It is bordering a DWMA but not on one. I believe DOE is using this to "eliminate" a Lincoln County site from consideration.

Page S-18 Lines 3 and 4

15 Is this statement correct? What basin is Coyote Springs, Dry Lake, and Eldorado Valleys located in if they are not in the Great Basin?

Alternative 3 - Expanded Use Page S-39

The comment about groundwater in Coyote Springs Valley - may be modified when DOE

16 uses information developed by the Air Force when they drilled wells in that valley for the MX missile in the early 1980's. The well logs and test data was given to the state Water Resources Division. The Air Force maintained pumping these wells would not adversely affect the Moapa dace. Who is right? Who is/was telling the truth?

PRIVATE CITIZEN 46 (CONTINUED)

Connie Simkins comments on Volume 2 Framework for Resource Management Plan
January 1996 draft EIS for NTS
April 23, 1996

There is a public perception that there is no difference between the Air Force, Department of Energy, Bechtel, or BLM. They are all thought of as "government". All of these have maintained a certain level of secrecy in their operations about what was being done at NTS. Perfect example is Area 51. Much of the public opinion comes from the treatment of the persons who contracted cancers because of the above ground nuclear testing that sent radiation over Lincoln County adversely affecting the health of residents here.

WE were told the test were "safe" yet we still have people dieing of radiation related reasons. People who were employed on areas of the test site were kicked off, miners, hunters, ranchers, casual uses completely stopped. We were told in the beginning that the restrictions would last only as long as the military needed the area for training for World War II. Well we all know how long ago that was over and the military and DOE still have control over the NTS area, plus they are extending that control to include the "view shed" concepts in many areas.

17 I think we must be most careful in setting priorities on how to manage NTS. There should be a direct balance between protecting the natural resources on NTS and allowing the existing activities to continue and new uses to be established. Man should have first priority, technology development and related economic development should be emphasized.

18 Do not manage for an environmental showcase. Take a look at where the plant and animal species are now and how healthy these populations are. Alternative I says the Pahute Mesa and Yucca Flat areas will continue to be used for "weapons readiness" tests. OK then look at the rest of the NTS and see where the sensitive plants and animals are now and make plans so these populations will maintain healthy levels, not expanded, not eliminated, - a true balance as nature intended it.

It is OK to manage for biodiversity but put a sense of reality into the plans to allow future economic development and expansions. Make sure ecosystem management is not just a tool for DOE, Bechtell, DOD to save their jobs. A lot of paperwork, studies, reviews, plans, and shuffling can go into a complicated ecosystem management. Put common sense into it. Make it real. We

PRIVATE CITIZEN 46 (CONTINUED)

19 must put in a practical sensible function of "how clean is clean". Make sure future plans don't make things worse by trying to clean something up and move it, rather than dealing with it safely on site. Take things on a site by site and case by case basis, rather than painting the whole NTS operations by a broad brush that must be "ecosystem" managed to the detriment and elimination of jobs and chances to develop new ideas to help people.

20 Page 2-2 Table 2-1 Resource issues

Under Land category - has a USDA Soil Conservation Service soil survey been done on NTS? This information would apply here if available.

21 Water category - what is definition of subsurface water - how deep - what is DOE perception of interconnection of basins of water? What information has been developed to backup this water basin theory. Cite studies and information gathered.

22 Page 2-3 Step 3 management actions

Include the CAB on lines 24 and 26 as "other interested parties".

23 Section 3.2 characteristics of environment

pages 3-4 and 3-5 tell us that no species have been destroyed to date as a result of operations at NTS and no plant species are endemic (prevalent in or peculiar to an area) at NTS. This supports my earlier suggestion to manage the area on a site by site specific basis. Look at what is there, manage to keep it while allowing current and future uses to flourish. Is there halogeton at NTS?

24 Page 3-6 section 3.2.5 use of natural resources at NTS

It says not much of the natural resources are used for economic, recreational or social benefits. This is because people have not been allowed on NTS.

RMP goals should be established at appropriate scales. Agree we should develop compatibility goals for resources of greatest importance and most likely to be affected - man - business - status quo priorities. Agree monitoring is crucial step to predict impacts and find suitable land uses.

25 Question. Page 4-3 section 4.2 site support activities. When will the maps identifying facility and other infrastructure features be available? I feel this is a major shortcoming of this planning effort which , if the maps were included, would help in reducing time and duplications of

PRIVATE CITIZEN 46 (CONTINUED)

these infrastructure facilities and services.

Question: Section 4.5 Water page 4-5 Why is DOE exempt from State water law. Define what the primary mission activities are? How do future plans fit into the DOE "primary mission activities"? How are future water needs planned for?

Section 4.10 Airspace - With the but of nuclear tests both above and below ground, I see no need to maintain restrictions over NTS. Yes, I support restrictions during times of active training at Bombing Range. This is necessary and desirable. But let the pilots, private and commercial fly over NTS. The big lid of secrecy is off now. Travel times and expenses would be greatly enhanced if pilots did not have to detour around NTS.

Section 4.11 Socioeconomics page 4-8. NTS is not located entirely within Nye County. Area 13 straddles the Nye/Lincoln line and Area 51 is in Lincoln County, plus all the "viewsheds" taken out of public land status recently are in Lincoln County. This is a use solely connected to NTS and lies in Lincoln County.

Transportation - Any framework for resource management plan must include specific steps to be taken and contracts to be used for every shipment going into NTS, Yucca, and Nellis Range Complex setting out routes, stops, liabilities, insurances, responsibilities, and accountabilities.

PRIVATE CITIZEN 47

May 1, 1996

Dr. Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy/ NVOO
P.O. Box 14459
Las Vegas, NV 89114

Dear Dr. Elle,

I hope that future Department of Energy Environmental Impact Statements will utilize many of the innovations seen in the Environmental Impact Statement for the Nevada Test Site.

Enclosed are my comments which represent my views, and not necessarily those of my fellow Community Advisory Board members. If you have any questions or concerns regarding my comments, please feel free to write me.

Sincerely,

Mary O'Brien
CAB Representative

Enclosures: EIS Comments

1. General Comments
   - Alternative 5 Proposal: Peter, Paul and Mary Alternative
   - TCE/Alternative Contamination Concerns
   - Citizen Concerns - Blowin' in the Wind
   - How Clean is Clean?
   - Land Withdrawal
2. Specific EIS Comments
   - Summary
   - Framework for Resource Management Plan (Vol 2)
   - Volume 1, Chapter 3

PRIVATE CITIZEN 47 (CONTINUED)

GENERAL COMMENTS

Peter, Paul and Mary Alternative 5

For several months, I have wrestled with the different alternatives of this EIS, trying to decide which parts I favor and which I don't. However, I always felt that something was missing. As I listened to "Peter, Paul and Mary" during their concert here in Las Vegas on April 26th, the answer came during Mary Traver's comments on waste generation and storage. Therefore, I

1 | would like to recommend another alternative to this EIS, Alternative 5: The "Peter, Paul and Mary" Alternative of Waste Reduction and Neutralization. This is probably the first time celebrities have provided input into an EIS.

Alternative 5 posits that every effort will be made to reduce the development of waste as well as to neutralize our current waste. This alternative also involves the commitment of our nation to a policy of waste reduction (and eventual waste elimination) as well as the commitment of the Department of Energy (DOE) to investigate and adopt new waste/storage technologies.

One example of the new technologies is the process a MIT graduate developed two years ago to convert waste into glass and steel though high heating. This was mentioned by me at a CAB meeting after seeing the television news story. According to the news story, all hazardous chemicals were neutralized through this process.

Due to the high cost of developing waste conversion (over $500 million for the MIT process), this technology or a comparable technology would require national DOE funding as our current NTS Waste Management and Environmental Restoration budget is $80 million a year.

Alternative 5 encourages considering the NTS as a prime location for this waste conversion technology.

TCE / Alternative Contamination Concerns

As I read this EIS, I encountered what appears to be a focus of the DOE to study only radioactive contamination at the NTS. Volume 1, Appendix A (Page 88) discusses that "domestic and industrial waste water is transported though the sewage systems into sewage lagoons or septic systems located in the base camps throughout the NTS." However, the text does not discuss what happens to industrial wastes in NTS areas such as the Decontamination Pad in Area 5.

As my fellow CAB members know, my past affiliation with Hughes Aircraft Company in Tucson, Arizona, has permanently changed my perspective on TCE contamination and its detrimental effects to the environment and the community surrounding the contamination. The deaths of many of my friends and co-workers at Hughes showed me that chemicals which were purported to be non-hazardous can sometimes be more dangerous than known hazards.

I personally know from my procurement activities with Reynolds Electrical and Engineering Company that 50 gallon drums of degreasers laced with TCE were routinely doused over machine parts during decontamination processing in the Decon Pad in Area 5 at the NTS.

2 | Therefore, I am requesting with this EIS that two questions be answered: 1. Will the DOE include non-radioactive chemicals in their present and future environmental studies at the NTS?

PRIVATE CITIZEN 47 (CONTINED)

3 | and 2. Will the DOE commit specifically to include the chemical TCE in all water studies done henceforth at the NTS?

Citizen Concerns: Blowin' in the Wind

Section 4-1, Volume 2 of this EIS asks for input on the NTS resources which are important and the goals for resource management.

For me, the answer to this is contained in the "Peter, Paul and Mary" hit, "Blowin' in the Wind". Although most people think of this song as anti-war, it also is a reminder of our human ecosystem and the ties each of has.

I believe that many Nevadans fear what's "blowin' in the wind" from the NTS. They hope that the soil on the Test Site is safe, and that whatever happened on the Test Site will never impact them. I also think that most Nevadans want a safe future and a world that is safe for themselves and their families.

Following are the specific resources I believe are most important to the NTS:

- Water
- Land, including vegetation and cultural history
- Air
- Present and future waste storage
- Technologies to reduce waste
- Technologies to neutralize waste

Resource management goals follow:

1. "All resources at the NTS are valuable national resources". (This is already stated in the DOE Land- and Facility-Use Management Policy, Section 1.3, Volume 2 EIS.)

2. "All resources should be returned to their natural state wherever feasible". This does not mean that we have to spend billions of dollars to try to undo the past 50 years at the NTS. Nor does this mean the the DOE should be relieved of their responsibility to try to restore areas of the NTS to pre-NTS state. Whenever this isn't possible, the DOE must develop a consistent policy to assess when restoration processes should occur.

3. "All storage sites must safely and effectively contain the waste storage." During a NTS tour with our Community Advisory Board, I asked whether or not the DOE has a master listing of all of the contents of each storage container at the NTS? I was told no, although present records are more detailed than those of the past. I therefore recommend that all storage containers be

4 | tracked into a master listing by contents and exact NTS location. This is critical should retrieval be necessary.

5 | 4. "New storage technologies should be evaluated and considered for NTS use." This does not ask for a re-invention of the wheel. However, as safety should be an important priority, this asks that the DOE keeps an open mind about storage technologies.

PRIVATE CITIZEN 47 (CONTINUED)

6 | 5. "The NTS should reduce waste whenever possible and encourage other DOE sites to do likewise." Much of the storage controversy at the NTS over the years has concerned two facets: A) The type of waste being stored. and B) The volume of waste. Face it, most Nevadans do not want the NTS to become the waste storage dump of the United States. This goal tackles the issue on the NTS as well as off-site. This could be realistically implemented by establishing waste storage goals such as, "Reduce overall waste generation at the NTS by 20% yearly." Likewise, other DOE sites should strive for a decrease in waste generation. The old "more is better" philosophy is a definite roadblock to achieving decreases in our waste generation.

7 | 6. "The NTS should neutralize waste whenever possible and encourage other DOE sites to do likewise." Imagine a DOE complex without waste!! Think of all the billions of dollars which would be saved as well as elimination of safety and political concerns. While many government officials may state that this is not a realistic goal, I challenge this thinking by saying, "Why?" The DOE needs to identify its roadblocks to achieving this goal and to eliminate these roadblocks. Any reduction in this area is definitely a benefit.

Also, at the risk of sounding Orwellian, we do not know what problems our waste will pose for us in the future. Is it possible (like TCE) that the chemicals we presently consider safe will become known hazards in the future? I believe, therefore, that it is to our advantage to neutralize our waste whenever possible now, and to avoid postponing waste neutralization.

How Clean is Clean?

Ever since I have been a CAB member, we have wrestled with the question, "How clean is clean?" for the NTS. What priorities should be placed on funding? Should Nevadans insist on total cleanup, or cleanup to a certain level? If so, what level? Should we tackle the most contaminated areas first, or begin with sites which are easier to restore? A combination of easy and hard to restore areas? Will it be advantageous to clean up areas if we have to resume testing?

8 | While our CAB has not answered all these questions, I believe that the DOE needs to establish environmental restoration criteria and standards in this EIS so true public discussion can evolve.

Land Withdrawal

It is apparent from this document that numerous groups with different goals and agendas exist for land use at the NTS. The DOE almost needs the wisdom of Solomon to decide what is the best future for the NTS. While one might be tempted to support some of the alternative Test Site uses, this document does not seem to satisfactorily answer two questions:

9 | *Once land is given away, can it be reclaimed by the DOE? and
*What liability will the DOE have for the land it gives away, and for how long?

SPECIFIC EIS COMMENTS

SUMMARY

10 | Page S-1 states that the EIS covers a 10-year period, yet there are references in this

PRIVATE CITIZEN 47 (CONTINUED)

10 | 0003 document to longer periods of time being needed to complete environmental restoration at the NTS. What happens after this 10 year period?

I also agree with Dennis Bechtel that the Dry Lake Valley, Eldorado Valley and Coyote Spring Valley sections are rarely mentioned. For the record, I also had hoped to see some comments on Area 51. Why is Area 51 eliminated?

11 | Page S-2. Why is Pahrump and Armagosa omitted? Should they be added?

12 | Page S-3, lines 20-23. Is wording missing? "And" on line 21 does not seem to fit.

Volume 2 Framework for Resource Management Plan

13 | Page 1-4, lines 8-9. Why does the Defense Program have the ultimate say in landlord programs at the NTS? Will this change if the moratorium continues?

14 | Page 1-5, lines 8-9. Why will the RMP (Resource Management Plan) take at least 2 years after the final EIS is released? What takes this long? Is there any way to expedite this process?

15 | Page 1-6, lines 7-8. This states that large, remote areas are required for DOE NTS missions. How long is a realistic period to change DOE NTS missions?

Page 2-2, Table 2-1. Following are two possible areas for additional resource issues:

16 |

Waste Management Technology	Containers and other methods to store NTS waste
Transportation	Rail, aircraft, commercial and private

17 | Should Emergency Response Teams be part of the Health and Safety resources?

Page 2-3, Public input on resource management and conservation:

1. Maintain a master listing of all containers by contents and exact location.
2. Emphasize neutralizing waste whenever possible.

18 | Page 3-5, line 14. What exotic plants were encroached onto the NTS? What do you consider an exotic v. a non-exotic plant?

19 | Page 3-5, line 20. The writer distinguishes between private lands and lands owned by Indian tribes near the NTS. Does that mean that the Indian lands are federal lands? Do these private lands include lands that were once owned by residents of Lincoln County?

20 | Page 3-6, Lines 1-2. Why is the wording "too little" used? What caused this? Funding? If so, why amount of funding would it take to characterize invertebrates? As a corollary, if only so much can be budgeted, how will the DOE decide whether waste and land studies be funded

PRIVATE CITIZEN 47 (CONTINUED)

20 cont. versus ecosystem studies?

21 Page 3-6, Line 15. Studies of the Chernobyl ecosystem show that wildlife even 10 years after the "meltdown" are radioactive. Given the past nuclear testing activities at our NTS, is hunting animals for consumption a safe and healthy desire?

22 Pages 3-7 and 8, Lines 32-34 and 1-2. The DOE traditionally plans in 5- or 10-years increments. Yet this text states that some desert ecosystem components recover "over much longer periods". What will the DOE do therefore to cover the total "disturbance recovery" period?

23 Page 3-8, Lines 16-27. This section discusses partnerships, yet seems to omit those of Nye and Lincoln counties. Why aren't those listed? Although several partnerships exist, how will the DOE ensure that those partnerships do not have mutually exclusive goals and intended outcomes? (As one example, several Lincoln County residents want NTS land returned to them while the Indian tribes want all NTS land returned to them.)

24 Page 3-9, line 16. This states that interdisciplinary teams will be used. Does the DOE know who will be on this team? If not, is the DOE open to suggestions, or will this be decided internally?

25 Page 3-9, line 23. This states that "Risk assessments or cost benefit analyses may be used to identify those models of greatest importance." Who will define which areas are of greatest importance? Will there be a chance for public review of these models? (One of our CAB meetings concerning water models, for example, took exception to models which utilized only "normal" rainfall and did not have parameters considering greater than normal rainfall.)

26 Page 3-10, lines 18-19 states that the "RMP will be a 'living' plan that can be modified quickly". How quickly can this plan be modified? Will it be solely at the DOE's discretion? How do you plan to do these modifications? If you do any modifications, will you let the public know?

27 Also, it has been my experience as a CAB member that there have been numerous references to the Nevada Test Site made by other EIS's. What mechanisms do you have to review other EIS's? If other EIS's include potential impacts to the NTS, how will your RMP be modified?

Page 4-2, Resources and Goals has already been covered in my "General Comments" section.

28 Page 4-5, Lines 21-22. What is the basis for this exemption? Is this a fixed exemption or one that may change over time?

29 Page 4-8, line 1. If mining is going to be allowed under one of your alternatives, will the DOE sell or lease the land? What happens if the nuclear testing moratorium is lifted? If the land is leased, what is the DOE's liability if workers are exposed to high radiation doses while mining?

30 If land is relinquished, are you going to require that all regulations you currently must comply

PRIVATE CITIZEN 47 (CONTINUED)

30 cont. with are followed such as the Open Skies Treaty and your agreements with the State of Nevada?

31 Page 4-8, line 16. What restrictions, if any, are planned for these increased military training flights? Will bombing be allowed? (I don't think that bombing of any sort should occur on the Test Site due to soil/air disturbances.)

32 Page 4-8, lines 26-32. Why isn't Lincoln and Clark Counties considered as there may be impacts on these citizens, particularly regarding transportation?

33 General. Hasn't the Community Reuse Organization changed its name?

Volume 1, Chapter 3

34 Page 3-21, Line 8. What is the Alternative Fuels Demolition Project? Why would this project be reduced under Alternative 4? Does this imply that it would be expanded under another alternative?

35 Page 3-21, Lines 11-12. If Alternative 4 is selected, where would conventional weapons demilitarization activities be transferred?

36 Page 3-21, Line 15. If land is relinquished, are you going to require that all regulations you currently must comply with are abided by, such as the Open Skies Treaty and your agreements with the State of Nevada?

37 Page 3-21, Lines 22-27. This mentions that possibility of a "nuclear era museum" at the NTS. Where would you locate this? How much would it cost? Would would manage it? If you don't do a museum on the NTS, would you have an off-site museum?

38 Page 3-21, Lines 29-31. This concerns increased NTS field trips. Would the DOE provide transportation to the Test Site? If yes, would the DOE expect reimbursement for this transportation? How will security be impacted if you are having more private citizens on the NTS?

39 Page 3-22, Lines 1-5. I have seen the destruction of petroglyphs at the Valley of Fire. What protection, if any, would exist at this location? (I concur with the American Indian recommendation in Volume 1, Appendix G-71). What monitoring has been done at this location? Would drinking water have to be provided at this location for visitor use?

40 Page 3-22, Lines 8-9. Would these car races exist only on the roads already built? (Some of these roads have dips and other barriers to high speeds.) If a car crashes, how will prompt medical treatment be provided? How will you ensure that these races do not disturb existing contaminated nuclear soil?

41 Foot/bicycle races. How are you going to police participants? Can you design courses that will avoid contaminated areas?

PRIVATE CITIZEN 47 (CONTINED)

42 Page 3-27, Lines 3-9. The EIS covers a ten year period, yet this text states that, "subsequent remediation activities could not be completed before the year 2030." How was this ending date determined? What remediation activities are excluded? Does this ending date assume current funding levels? If yes, what effect would reduced funding levels have? To what level (how clean is clean?) is included in your remediation activities? Do you have a set timetable for these remediation activities?

43 Page 3-27, lines 30-33. The text talks about emplacing low-level waste in Area 3 craters. Since testing caused these craters, how do you know that adding waste to contaminated areas won't increase the risk of additional spillage? Are your storage containers tested and rated for storage in contaminated soils? How do you know that nuclear contaminants will not cause decomposition of the storage containers or some other safety breach?

44 The text also states that filling these craters will "prevent the downward migration of precipation into the waste." Two questions emerge: 1. How do you know this to be true? and 2. Assuming this is true, then where will the waters travel? Is it possible that restoring the "natural drainage patterns" will cause the water to flow to a more hazardous area?

45 Page 3-38, lines 2-7. The text states that there is no radioactive contamination noted in Area 5. However, were TCE tests ever conducted? If not, will TCE be considered in future tests as already discussed in my "General Comments" section?

PRIVATE CITIZEN 48

Verbal Comment 1-800 Line

Comment Code: Private Citizen 48

Name: Heidi Harr

Date: May 3, 1996

City: Boulder City, NV

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Wants to be sure to receive final EIS (she has the draft.

PRIVATE CITIZEN 49

Ernest E. Gutlein
167 Almendral Avenue
Atherton, CA 94027
415 369 6690

May 2, 1996

Donald R. Elle, Director
Environmental Protection Division
US Department of Energy
PO Box 14459
Las Vegas, NV 89114

Subject: DEIS for the Nevada Test Site and Off-site Locations in the State of Nevada

Dear Mr. Elle,

I was amazed at the inadequacy of site investigation for the Nevada Test Site, and lack of analysis of consequences to adjacent communities.

Investigation of the proposed Yucca Mountain repository have revealed that ground water has been contaminated and that the source of contamination is the test site. The Nevada Department of Fish & Game have taken blood samples from deer and found them to be radioactive. On following up the lead the rangers discovered contaminated springs.

Only limited tritium or chlorine 36 testing has been performed to measure the extent of the subsurface contamination.

Relying on the presence of chloride ions to prove that no moisture has percolated assumes that there are no preferred pathways. This is not realistic, since faults and fissures are common and water will naturally choose the easiest path.

1 Are the Indian tribes/nations not considered cooperating agencies? It is not apparent that their input is reflected in the DEIS

PRIVATE CITIZEN 49 (CONTINUED)

2 Is the USGS not a cooperating agency that must be consulted under the NEPA rules?

3 The effect of ground water contamination below the test site on the Amargosa aquifer, the Amargosa River and eventually Death Valley National Park must be considered.

4 The effect of the ground water contamination on the water supply for Las Vegas and other communities dependent on groundwater supplies must be addressed.

5 The whole regime of ground water flow -direction and movement- must be better understood and described, based on measurements and tests.

6 The effect of continued deposition of radioactive contaminated hardware (from the Gulf war among other sources) and radioactive waste needs to be described, and limitations of such future deposition must be defined.

7 I hope that a revised DEIS will clearly reveal the extent of the NTS contamination, so that means of confining the waste can be initiated as early as possible, and some the NTS can be restored. To do this, it will be necessary to perform an adequate site characterization and involve agencies and advisors that do not have to pretend that all is well.

Cordially,

Ernest Gutlein

PRIVATE CITIZEN 50

Verbal Comment 1-800 Line

Comment Code: Private Citizen 50

Name: Mr. Matt Kennedy

Date: May 2, 1996

City: Las Vegas

☒ Telephoned ☐ Please call

☐ Returned your call ☐ Will call again

Comment: Pick Alternative 2

PRIVATE CITIZEN 51

Fax to : 702 295 1264 Donald R. Elle , Director Environmental Protection Division , U. S. DOE Nevada Test Site (NTS) .

Fax from : 602 924 9141 Paul J. Kennedy

Subject : DOE/EIS 0243 for the NTS.

I am a *gravely* concerned citizen regarding all activities that involve nuculear material.

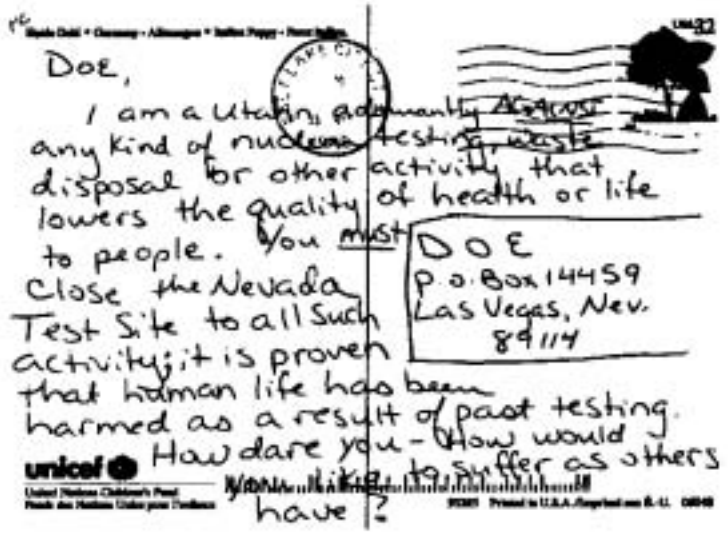
I oppose any activity that involves movement of such materials.

I recommend a full-blown Congressional hearing on this entire subject with appropriate nationwide media coverage so that an *INFORMED* general public can let their Representatives know their feelings on this serious matter.

Because these nuculear activities portend such horrifying consequences, I propose a Presidential Moritorium on such activities until Congress completes its investigation , solicits public feedback and makes their recommendations .

Paul Kennedy
5106 E. Emelita Ave.
Mesa, Arizona 85206

PRIVATE CITIZEN 52



DOE,

I am a Utahn, adamantly AGAINST any kind of nuclear testing, waste disposal or other activity that lowers the quality of health or life to people. You must

1 Close the Nevada Test Site to all such activity; it is proven that human life has been harmed as a result of past testing. How dare you - How would you like to suffer as others have?

DOE
P.O. Box 14459
Las Vegas, Nev.
89114

unicef

United Nations Children's Fund

PRIVATE CITIZEN 53

May 3, 1996

Vernon J. Brechin
255 S. Rengstorff Ave. #49
Mountain View, CA 94040 1734
(415) 961-5123

Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas, NV 89114
(702) 295-1433

Dear Mr. Elle:

Following this cover letter are my comments on the "Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada-January 1996" DOE/EIS 0243 (NTS DEIS).

Although I was quite impressed with the amount of new information that was included in this second EIS for the NTS I was also surprised at some of the items that had been left out.

I did like the set of color and line drawing plates in the back of the "Framework" document and hope to see more of those with some good descriptions, analysis and references to the sources of this GIS work.

I believe that the Environmental Protection Division has done a poor job of presenting the "Close the Test Site Alternative." I hope you give this option some serious consideration in the near future.

Many of the comments that I submitted, during the "Implementation Plan" phase, were squirreled away in a new comment category reserved for comments that DOE/NV considered to be editorial in nature. I do not believe this conforms with the spirit an intent of NEPA and as a result I am distributing my comments widely.

Sincerely,

Vernon J. Brechin

cc: Senator Harry Reid-(Nevada)
Senator Richard H.-Bryan (Nevada)
Senator John Glenn-(Ohio)
Representative John Ensign-(Nevada Dist.1)
Representative Barbara Vucanovich-(Nevada Dist. 2)
John B. Walker-State of Nevada Nuclear Waste Project Office
Earl Dixon-Harry Reid Center for Environmental Studies, LV
Dan W. Reicher-PDAS for Policy (HQ DOE)
Robert Alvarez-DAS for Natl Sec & Env Rest Pol (HQ DOE)
Sandi Carroll-US EPA Region IX

PRIVATE CITIZEN 53 (CONTINUED)

Revision 1

PREFACE

The availability of the "Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada" January 1996 (DOE/EIS-0243) (NTS DEIS), was announced in the Federal Register / Vol. 61, No.21 / Friday, February 2, 1996 on page 3924 (61 FR 3924). The complete Impact Statement consisted of eight public documents and an unreleased classified appendix. The eight public documents were made available for public review and comments. The comments were to be submitted by May 3, 1996.

The "Draft Implementation Plan for the Nevada Test Site Environmental Impact Statement" February 1995 (DOE/NV-390) Revision 0, contains a "Work Schedule" on page B-1. This work schedule indicated that the Draft EIS was expected be made available during the middle of May, 1995 and the Final EIS was expected to be released during the middle of April, 1996.

On February 20, 1996, the Department of Energy (DOE) published a "Notice of Proposed Rulemaking" in the Federal Register (61 FR 6414) in which they proposed doing away with their policy of requiring that Implementation Plans be made a part of the public processes of preparing EISs.

The original law, that requires the preparations of EISs, is the National Environmental Policy Act (NEPA).

The complete set of NTS DEIS documents, consist of the following items:

Document 1 - Summary (Includes the "Reader's Guide" in the rear)
Document 2 - Volume 1, Chapters 1-9, Part A
Document 3 - Volume 1, Chapters 1-9, Part B
Document 4 - Volume 1, Appendices A-F A-Description of Projects and Activities, B-Federal Register Notice, C-Relevant Regulatory Requirements, D-Distribution List, E-Impact Assessment Methods, F-Project-Specific Environmental Analysis
Document 5 - Volume 1, Appendix G American Indian Comments
Document 6 - Volume 1, Appendix H Human Health Risks and Safety Impacts Study
Document 7 - Volume 1, Appendix I Transportation Study
Document 9 - Volume 1, Appendix J Classified Supplement: Project-Specific Environmental Impact Analysis (Lyner Complex) (Not available to the general public)
Document 8 - Volume 2, Framework for Resource Management Plan

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In addition, to the set of documents that were distributed to the public, there is an internal "controlled" set of NTS EIS documents titled "Draft Nevada Test Site Environmental Impact Statement" 1995 (DOE/EIS-0239).

PRIVATE CITIZEN 53 (CONTINUED)

Revision 1

COMMENT REMARKS and ORDER

Due to time constraints, I was only able to comment on about 30% of the items I thought were significant. I did not get to any of the items I had marked in the Appendixes and of course was not able to review the material contained in the classified Appendix J.

What follows are 42 pages of my comments listed in the following order:

Document	Comment page
Summary (document 1)	pages 1 through 28
Reader's Guide	pages 29 through 30
Volume 2, (document 8) Framework for Resource Management Plan	pages 31 through 36
Volume 1, (documents 2 and 3) Part A and part B of the main NTS DEIS	pages 37 through 42

Vernon J. Brechin
May 3, 1996

PRIVATE CITIZEN 53 (CONTINUED)

1

COMMENTS ON THE DRAFT NTS EIS - January 1996. (DOE/EIS 0243)
(Comments Revision 1)

SUMMARY Volume

"Summary" volume

Back of front page "Summary" volume

1st Paragraph
5th line
1 "The NTS occupies 3,496 square kilometers (1,350 square miles)..."
Correct the numerical values to read the legal values of 3,221 and 1,244, respectively.

2nd Paragraph
2 This paragraph should mention the numerous other facilities that the Nevada Operations Office is responsible for in the State of Nevada and in at least five other states.

1st Bullet
3 Remove this, since conducting subcritical experiments and preparing for the development of advanced weapons designs, during test ban negotiations, is not supportive.

3rd Bullet
4 Move this to the bottom of the list, since the only alternative energy project that was considered was solar and the deployment at the NTS has been rejected.

4th Bullet
5 A recently released ORIF document, from DOE's Defense Program office, indicated that new nuclear weapon design concepts were being considered. If these considerations were recent, then that would be a clear violation of current US policy.

6th Bullet
6 "Manage wastes generated on the NTS and at other DOE-approved facilities across the United States."
The Nevada Operations Office is being held responsible for waste management operations in other states due to the operations they performed there in the past.

7th Bullet
7 "Perform site characterization and environmental restoration activities required to minimize of eliminate the impacts of past operations."
Replace the term "Minimize" with the term "reduce."

PRIVATE CITIZEN 53 (CONTINUED)

2

"Summary" volume

INTRODUCTION

8 p. S-1, line 11, "This EIS examines existing and potential impacts to the environment that have resulted, or could result, from current and future DOE operations in southern Nevada during the next 10-year period."
D01. Considering, that the previous NTS EIS was conducted almost 19 years ago, the 10-year period may not cover a sufficient time span. More importantly, because of the special nature of radioactive waste and contaminated materials, the 10-year period of study tends to ignore the extremely long-term consequences of materials which will remain hazardous for up to a quarter million years. Though, the NTS contains similar radioactive materials to those which may be deposited in the potential Yucca Mountain Repository, it is not required to comply with the same containment requirements which specify a 10,000-year period of isolation. These requirements are set forth by the U.S. Environmental Protection Agency in the U.S. Code of Federal Regulations (see 40 CFR 191.13 through 191.16). The radioactively contaminated materials, at the NTS, also remain exempted from the regulations of the Nuclear Regulatory Agency.

9 p. S-1, line 13, "This EIS examines existing and potential impacts from DOE programs at the following sites:..."
D02. This sitewide EIS should include all the far-ranging facilities for which the Nevada Operations Office (DOE/NV) is responsible. The draft and final "Implementation Plan for the Nevada Test Site Environmental Impact Statement" June 1995 (DOE/NV--390 Revision 0) (section 3.4.1.3 Environmental Restoration) indicated that a formal program has been in place called the Nevada Environmental Restoration Project (NV ERP). This project was started in 1988 and involves numerous contractors, research and educational institutions, as well as other government agencies. The primary contractor, that handles much of the site evaluation work, is the IT Corporation. A series of internal report documents has been created since FY 1992 which describe a vast program that include operations at 10 off-site underground nuclear explosion sites which are located in Mississippi, Alaska, Colorado, New Mexico as well the two, Nevada based sites, which are covered in this draft EIS.
On page 2-9 of the final Implementation Plan it was stated that "Therefore, analysis of waste generation and transportation issues associated with Nevada Environmental Restoration Project work in other states will be addressed in the waste management section of the Environmental Consequences chapter of the EIS. Additionally, out-of-state Nevada Environmental Restoration Project waste issues will be addressed in the transportation study."
10 The NTS Draft EIS fails to mention the formal NV ERP program, the off-site test areas, other than those within the State of Nevada, and does not mention or otherwise

PRIVATE CITIZEN 53 (CONTINUED)

10 cont. address the waste management or transportation issues associated with the, out-of-state, underground nuclear test sites. No public comments were received, during the EIS implementation phase, that suggested that references to the, eight out-of-state test sites, the NV ERP, or the references to the internal documents, should be excluded from the Draft EIS.
One of the internal documents is titled the "Nevada Environmental Restoration Project FY 94-99 Cost, Schedule, and Technical Baseline Project Management Support." (Performance Baseline) It was Revision 1 and was issued as two volumes during November of 1993 by the Environmental Restoration Division of DOE/NV. Apparently, many of the

11 decisions that are made, concerning the majority of off-site areas, are made without the benefit of formal environmental assessments and without local community involvement. The reports of the work has been issued in internal documents such as "Environmental Restoration and Waste Management: An Overview" January 1995. This document was prepared by the by the Environmental Restoration and Waste Management (ERWM) Program division of DOE/NV.
Another two volume internal report titled "U.S. Department of Energy Nevada Operations Office Annual Site Environmental Report - 1993" September 1994 (DOE/NV/11432-123) list

12 numerous other facilities which DOE/NV is responsible for but are not mentioned in the Draft NTS EIS. These facilities are, the Nevada Operations Office, Las Vegas; the extensive North Las Vegas Complex and the Remote Sensing Laboratory at the NAFR in North Las Vegas, Nevada; Amador Valley Operations, Pleasanton, California; Kirtland Operations that includes the Craddock Facility and facilities at Kirtland Air Force Base, Albuquerque, New Mexico; Los Alamos Operations, Los Alamos, New Mexico; Santa Barbara Operations that includes the Robin Hill Road and Francis Botello Road Facilities, Goleta, California; Special Technologies Laboratory, Santa Barbara, California; Washington Aerial Measurements Department, Andrews Air Force Base, Maryland; and Woburn Cathode Ray Tube Operations, Woburn, Massachusetts.

p. S-2, "Figure S-1. NTS and selected areas of interest."
003. The 38,556 acre section of property described in Public Land

13 Order 1662 was omitted on this map. At one time it was labeled as Area 51. This, and all the following maps, should consistently show all the properties that are legally assigned to the Department of Energy's (DOE) Nevada Operations Office (DOE/NV). The boundary of the Nellis Air Force Range Complex (NAFR), that lies just east of the

14 Area 13 box, should be updated and remain consistent in all all the maps in the Final EIS. The boundary, shown on this map, was changed over five years ago. The positioning of the Area 13 box could be made more precise. The section of Kahute Mesa which is part of the NAFR but assigned to the

15 DOE/NV, under the "Memorandum Of Understanding Between The Department Of The Air Force Tactical Air Command Tactical Fighter Weapons Center And The Department Of Energy Nevada Operations Office" (E-AI08-82NV10283), should be shown as a

PRIVATE CITIZEN 53 (CONTINUED)

15 cont. separate entity by a line that follows the boundaries of the NTS land withdrawals.

Purpose and Need

p. S-3, line 33, "Presently, the primary mission of the DOE at the NTS is to maintain a readiness to conduct test, and, in an unlikely circumstance, to conduct test if so directed by the President."
004. From 1964 until 1993 a state of readiness was maintained on Johnston Atoll in order to resume atmospheric testing if so directed by the President. The "Safeguard C" atmospheric nuclear testing readiness capability program consumed $1.6 billion before Congress was made aware of the program's continued existence and that there had been virtually no probability that the President would have ordered the resumption of atmospheric testing during the last quarter century of the program. Let us not forget this lesson. The NTS readiness program will likely consume far greater quantities of public funds then the "Safeguard C" program did.

p. S-4, line 8, "The DOE requires management of all of its lands and facilities as valuable national resources with stewardship based on the principles of ecosystem management and responsible development."
005. Most environmental scientist agree that the level of development that can be sustained in a fragile desert environment is extremely limited. Therefore, proper ecosystem management of the NTS can only be achieved by severely limiting the development of the man-made

16 resources at the site.
The "Framework for the Resource Management Plan," which is contained in Volume II of this EIS, presents a series of draft goals which strongly suggest that the existing, human mission goals should take precedence over concerns for environmental sustainability.

Programs Considered
Defense Program.

p. S-4, line 22, "Defense Programs. "The primary mission of the Defense Program is to help ensure the safety and reliability of the nation's nuclear weapons stockpile.
006. A document, recently released by the Office of Research and Inertial Fusion (IRIF) at DP-11 of the Defense Programs office of DOE Headquarters, strongly suggest that new concepts in the design of nuclear weapons has been recently considered. If this is accurate, then this would mean that the public and their Congressional Representatives were

17 misled. It would also violate the stated goals of the U.S. Government in regards to its position on achieving an early signing of a Comprehensive Test Ban Treaty and its compliance with the provisions of Article VI of the Treaty On The Non-Proliferation of Nuclear Weapons.
The Defense Program paragraph should clearly state what the actual missions are.

PRIVATE CITIZEN 53 (CONTINUED)

Waste Management Program

p. S-4, line 30, "The NTS presently serves as a disposal site for...a limited amount of transuranic mixed waste."

18 007. These limits should be clearly stated in the main document and if the cleanup of large areas of plutonium-239 contaminated surface areas is expected to cause this limit to be exceeded, then an alternative storage and transportation solution should be included in the NTS EIS.

p. S-4, line 33, "...low-level, transuranic, mixed, hazardous and classified wastes have been disposed of in..."

19 008. The NTS EIS as well as the Waste Management PEIS should provide more information on the various categories of "classified wastes" including the estimated volumes, the curie levels, and some of the basic properties of these waste forms. These documents should also present more specifics on where these waste forms are stored and buried, and should indicate the quantities at each site.

Environmental Restoration Program

p. S-5, line 1, "The goal of the Environmental Restoration Program is to ensure that risks to the environment and to human health and safety....are either eliminated or reduced to protective levels."

20 009. The term "protective levels" needs to be added to the Glossary and defined. The EIS should be very specific about what is meant by this term. This explaination should indicate how these levels are determined and what techniques will be required to achieve this protection. The length of time, that protective measures will need to be emplaced, should also be covered.

21 This section should also mention the formal Nevada Environmental Restoration Project (NV ERP) and provide specific references to the many internal documents which are associated with this ongoing project.

ALTERNATIVES

p. S-5, line 24, "These alternatives have been designed to analyze and compare the potential effects of a wide range of use options. The use the DOE ultimately selects, however, may not be one of the alternatives in its entirety,..."

22 010. Section 3.2 Alternatives Eliminated from Further Consideration on page 3-26 mentions that many proposed alternatives were eliminated early in the public scoping process. The DOE determined that certain uses of the site were unreasonable. The proposal to use the site for a single program was rejected by DOE/NV because "...this alternative fails to meet the DOE's need for a site that can support evolving DOE missions." This suggest that the decision was based more upon the mission needs of the DOE then by the needs of the public stakeholders. This continuing arrogant attitude of DOE indicates that many of their members have not benefited from the DOE's "Lessons Learned" program.

PRIVATE CITIZEN 53 (CONTINUED)

23 This EIS report treats the option of non-use as an impractical alternative. The DOE is occupying withdrawn public land and therefore it should not be the entity that determines the use of the land. The public stakeholders should make the use determination based upon the revised priorities of the Post Cold-War Era. The last statement tends to indicate that the alternative, chosen in the EIS, Record of Decision (ROD), will not need to be strictly adhered to.

24

p. S-5, line 27, "As part of the planning process related to each alternative, land-use maps have been developed to illustrate the zoning that would be implemented for each alternative and the selected activities within the alternative. The land-use maps indicate existing land status to the extent that past or present activities might influence future land use."

25 011. The base maps, used to show the zoned areas, are defective. The former Area 51 has been deleated and the NTS site borders on the eastern side of Area 15 have been left open. The base maps should include all the areas of the NTS including the area that was once labled as Area 51. The maps should have a continuous, non-interrupted, border line. The map, shown in Figure 4-3, on page 4-10, approaches an accurate depiction of the NTS boundries.

26 The shading of the maps also indicates that most of the underground nuclear explosive testing area, that lies in the Nellis Air Force Range (NAFR), will remain under the control of the DOE. This maintainance, of DOE control, should not be assumed.

The map, Figure 3-2, on page 3-12, which depicts the land use associated with Alternative 2, Discontinue Operations, indicates that the entire test site will remain as a monitored and restricted zone. It also shows that the Yucca Mountain Site Characterization Zone would remain.

27 A government agency, such as the DOE, which has created environmental problems which will cost present and future generations hundreds of billions of dollars to deal with, should not base future land zoning upon the past use of the land. The "Lessons Learned" program of the DOE should extend to the realization that past zoning practices often led to tragic abuses of DOE managed property.

Alternative2 - Discontinue Operations

p. S-6, line 23, "Control of the NTS would be maintained by the DOE."

012. Since the DOE was responsible for the human health, safety and security problems at the NTS they should not be the federal agency that is rewarded with long-term control of the property. The public may be unwilling to fund this agency for the next quarter million years in order to protect them from the problems created at the NTS.

PRIVATE CITIZEN 53 (CONTINUED)

Other Alternatives

p. S-7, line 22. "These alternatives were considered and dismissed as unreasonable for such reasons as..."
013. Refer to comment no. 010.

Table S-1 Comparison of program activities for the alternatives (4 pages)

(Page 2 of 4)
p. S-9, "Waste Management," Alternative 1, 3 and 4, Area 5, Storage, "Transuranic Waste."
28 014. The waste category called Classified Transuranic Waste (CTWU) appeared in the Draft EIS Implementation Plan. This waste category should also appear in the EIS.

p. S-9, "Waste Management," Alternative 2, "No Activity"
29 015. The activities that are mandated by existing legal agreements with the State of Nevada and the Environmental Protection Agency (EPA) should be listed here. The DOE is required, by federal and state laws to take corrective actions.

(Page 3 of 4)
p. S-10, "Environmental Restoration," Alternative 2, "No Activity"
016. Refer to comment no. 015.

p. S-10, "Environmental Restoration," Alternative 1, 3 and 4.
017. The Central Nevada Test Area and the Project Shoal Area should be listed under the "Underground Test Area Corrective Action Unit" heading if, like the underground nuclear explosion sites at the NTS, they have been moved from the EPA's regulatory framework of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments Reauthorization Act (SARA) of 1986 to the regulatory framework of the Resource Conservation and Recovery Act, (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984. All of the 11 underground nuclear explosion sites should be treated equally under the same regulatory framework. The reason and justification for this transfer, from one regulatory framework to another regulatory framework, needs to be clarified.
30
Under Alternative 3 and 4 the "Project Shoal Area" is listed. Under this heading is stated,
31 " - Continue Characterization and Remediation"
" -.Accelerate Characterization and Remediation of Site."
The two statements are redundant and the first one should be removed.
32 The references to the Project Faultless site and the Central Nevada Test Area (CNTA) are missing and should be included in these Alternative columns.
The site characterization programs have existed for at least eight years and have been applied unequally to the "off-site" and "on-site" test areas. Information, concerning the historical pace of these characterization programs and

PRIVATE CITIZEN 53 (CONTINUED)

the immediate test results from contractors such as the Desert Research Institute (DRI) and the International Technology Corporation (IT Corp.), should be posted on the Internet World Wide Web home pages of the DOE.
Additional historical information should be posted including the fact that all of the off-site testing areas have already undergone one or more rounds of site restoration activities in the past.

(Page 4 of 4)
p. S-11, "Work for Others," Alternative 1 and 3.
018. There is very little discussion, of most of the activities
33 listed here, in the main body of the EIS. Activities such as "Dipole Mail" and "Cut and Cover" are not mentioned in any other part of the EIS.
Despite the fact that there was little public input, concerning this topic, it has been considerably altered
34 since the issuance of the draft and final Implementation Plans. These plans indicated that the U.S. Air Force's use of the airspace was an issue. This topic has been eliminated without an explanation.
The main body of the EIS should provide a detailed listing
35 of the other government agencies for which the DOE provides services. The service programs should also be listed along with the contract numbers, interagency agreements and the period in which the contract is expected to run. This information should also be made available on the DOE's, web based, public home pages.

(Page 4 of 4)
p. S-11, "Site Support Activities," All Alternatives.
36 019. This is a topic that has been radically revised since the issuance of the draft and final Implementation Plans. In fact, this topic is a replacement for the previous topic which was titled "Disposition of Withdrawn Lands." The disposition of withdrawn land refers to the transfer of land administration from DOE or Air Force control to another agency or to the private sector. The site support activities, listed in Table S-1 of the NTS Draft EIS, is not related to the potential loss of the DOE's administrative control over the withdrawn lands which are now known as the Nevada Test Site. The "turn back of selected remediated lands to public domain," that was presented in Table D-1 of the final Implementation Plan, is not mentioned under
37 Alternative 4 of the Site Support Activities section in Table S-1. Now, this section only presents positions which assume continued DOE control of the withdrawn lands that make up the NTS. The previous suggestion of the transfer of
38 the nuclear explosive testing area at Pahute Mesa, from the Air Force's Nellis Air Force Range (NAFR) to the DOE, was dropped. Under Alternative 2, the suggestion that test site activities be continued at the Tonopah Test Range, was
39 introduced in the draft EIS.
These changes were not reflected in the stakeholder comments which appeared in the final Implementation Plan.

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AFFECTED ENVIRONMENTS
Land Use and Airspace

p. S-12, line 13, "The NTS encompasses approximately 3,500 square kilometers...(1,350 square miles...) of land area reserved to the jurisdiction of the DOE."

020. The area values should reflect the area of the lands that were withdrawn to either perform or support nuclear explosive testing at the NTS. The legal values for this area are 3,221 kilometers and 1,244 miles, respectively. The airspace, that is controlled by the DOE, includes an extension that goes well beyond the surface boundaries of the NTS. This extension surrounds the area that was once labeled as Area 51.

40

p. S-13, line 1, "The site was returned to the U.S. Bureau of Land Management in 1970."

021. The DOE needs to cite evidence that this transfer occurred.

41

Transportation and Waste Management

p. S-15, line 9, "Transuranic, mixed transuranic, mixed low-level, hazardous waste, and Toxic Substances Control Act waste are stored at the NTS."

022. The NTS EIS draft Implementation Plan, Appendix D, page D-3, indicated that classified transuranic waste (CTRU) was also stored at the NTS. The final EIS should provide a detailed listing of the volumes, locations, and general characteristics of the CTRU. Because, it is now the stated policy of the DOE to avoid hiding environmental issues behind a veil of secrecy, the Record of Decision (ROD) should not be signed until there is a proper accounting of the CTRU.

42

Geology and Soils

p. S-16, line 26, "Underground nuclear testing has resulted in impacts on the physical environment in terms of ground motion, disruption of geologic media, surface subsidence, and contamination of the subsurface geologic media and surficial soils."

023. After the word "nuclear" insert the word "explosive."
Replace the phrase "has resulted in" with the phrase "created direct."
Replace the phrase "disruption of" with the phrase "damage to."
In two places, Replace the phrase "geologic media" with the phrase "subsurface environment."
Replace the word "subsidence" with the word "collapse."
Replace the word "surficial" with the word "surface."

43

p. S-16, line 28, "Waste disposal operations have also contributed to surface disturbances and placement of materials having long-term impacts on the environment."

024. Replace the word "contributed" with the word "added."
Replace the phrase "surface disturbances" with the phrase "surface and near surface disruption."

44

PRIVATE CITIZEN 53 (CONTINUED)

Replace the phrase "and placement" with the phrase "due to the disposal."
After the word "having" add the word "extremely."

(CONT)

Table S-2. Summary of remaining radioactivity on the NTS

p. S-17, line 6, "Aerospheric & Tower Tests," "MAJOR KNOWN ISOTOPES OR WASTES," column and "REMAINING INVENTORY" column

025. After Europium, add "Plutonium-239."
The curie level is considerably higher than 20, this figure needs to be corrected to reflect the total emissions from all the atmospheric test. A figure, provided in Table 1-1 on page 4 of the Congressional Office of Technology Assessment document titled "The Containment of Underground Nuclear Explosions" (OTA-ISC-414), suggest that the figure should be closer to 12,000,000,000 curies. This error, may suggest, that many other estimates in this column may be seriously underestimated.

45

46

p. S-17, line 8, "Safety Test"

026. In the "SOURCE OR RADIOACTIVITY" column replace the phrase "Safety Tests" with the phrase "Plutonium-239 dispersal experiments."
In the "TYPE OF AREA" column replace the overly general phrase "Above Ground Experimental Areas" with the terms, U.S. Air Force Nellis Air Force Range "(NAFR)," Tonopah Test Range "(TTR)" and "NTS Atmospheric Test Areas."

47

p. S-17, line 16, "Crater Disposal"

027. In the "TYPE OF AREA" column replace the word "induced" with the word "created."

48

p. S-17, line 20, "Deep Underground Test"

028. Either add, to the above title, "Nuclear Excavation Experiments," or create another category for the "Nuclear Excavation Experiments." The excavation experiments created large, surrounding, areas where the surface remains highly contaminated.
In the "MAJOR KNOWN ISOTOPES OR WASTES" column, remove the term fission and add the terms "plutonium-239," "cesium-137," and "strontium-90."

49

50

p. S-17, line 24, Additional comments for Table S-2.

029. The "MAJOR KNOWN ISOTOPES OR WASTES" column, for all the Sources of Radioactivity categories, should provide consistent and more detail in the listing of the isotopes. The major isotopes should be shown with their atomic weight and the estimated mass, of isotopic material, should be provided in grams.

51

Surface Hydrology and Groundwater

p. S-19, line 9, "Underground nuclear testing has resulted in contamination of groundwater in the immediate vicinity of a number of tests."

030. Replace the very vague phrase "immediate vicinity," with a more specific phrase such as "within a 1,000 foot radius."

52

PRIVATE CITIZEN 53 (CONTINUED)

52 cont. Replace the vague phrase "a number of tests," with a more specific value such as "more than 100 tests."

p. S-19, line 9, "The quality of the groundwater has been impaired, but is limited to those areas where test have occurred."

53 032. Replace the word "impaired" with the word "destroyed."
54 Based upon a 1,000 foot radius exclusion zone, provide the
55 area that may been affected. This figure may be more than 100,000 acres. The figure should include the underground nuclear explosion test areas at the off-site areas in Mississippi, Colorado, Alaska, New Mexico, as well as the two sites in central Nevada.
56 Since many underground nuclear explosions involved the dispersal of many tons of lead, this and other heavy metals are likely to add to the water pollution problems.

p. S-19, line 10, "To date, no radioactive contamination has been detected in on-site water supply wells or in off-site monitoring wells."

032. This sentence should state that radioactive contamination has been detected in many of the on-site monitoring wells and that contamination may start showing up, in some of the supply wells, several decades from now. Radioactive contamination has shown up in numerous off-site wells and this is documented in the DOE's own publications. Monitoring wells UC-1--P-2SR located at the Project Faultless underground nuclear explosion site at the Central Nevada Test Area, EPNG 10-36 located at the Project Gasbuggy site in New Mexico's Carson National Forest, DD-1 at the Project Gnome-Coach site near Carlsbad, New Mexico, GX No.1 at the Project Long Shot site on Amchitka Island, Alaska, and at least six wells at the Project Dribble site (Salmon site), have all produced evidence of radioactive contamination resulting from the deep underground nuclear explosions.
57
At the NTS, a radioactive tritium concentration level of 26,000 picocuries per liter was detected in water drawn from the UE-5n well. This was recently reported in the DOE/NV internal document titled "Nevada Test Site Annual Site Environmental Report - 1994" (DOE/NV/11432-175). The previous Annual Site Environmental Report did not refer to this well and the EPA's monitoring reports fail to
58 mention this well after 1989 when the tritium concentration was reported at 480 picocuries per liter.
The DOE/NV should produce a report, on this well, that documents its history, including all sampling and reporting that has taken place since it was constructed. The report should explain why this well was not monitored on a regular basis after high levels of contamination were detected.

p. S-19, line 11, "In addition to monitoring, the results of groundwater models developed to investigate potential containment migration suggest that there will be no measurable contamination from testing in areas not under control of the DOE or the U.S. Air Force."

PRIVATE CITIZEN 53 (CONTINUED)

033. This sentence assumes that the DOE and the U.S. Air Force will remain in control, of the vast areas surrounding the contamination sources, for something like a quarter million
59 years. This is absurd. These agencies and the American public need to be reminded that this property is public land, and that this land has only undergone a temporary withdrawal from the public domain for certain restricted
60 uses. Now that nuclear testing has ended, the DOE is no longer in compliance with the laws which withdrew the land. It's the height of arrogance to assume that the public's access, to the nuclear contamination, will be restrained for the next quarter million years.
Some of the groundwater modeling also suggest that the
61 flow of contaminates may be much more complex than was once thought. The nuclear chimneys, formed by the underground explosions, may provide a path for contamination to move toward the surface.

p. S-19, line 25, "The Long-Term Hydrologic Monitoring Program includes sampling of five wells and one spring in Hot Creek Valley outside of the Central Nevada Test Area. No contamination related to the Faultless tests has been detected in samples from those wells."

034. One of the DOE's own contract reports, "Evaluation of
62 Groundwater Monitoring at Offsite Nuclear Test Areas - March 1991 (DOE/NV/10845--7) indicated that many of the monitoring wells were to distant or located in regions that would prevent them from ever "seeing" a contaminant plume.

Occupational and Public Health and Safety

p. S-25, line 7, "A total of 230 radiation-contaminated areas have been identified and mapped on the NTS, the NAFR Complex, and the Tonopah Test Range. These areas are posted, and if contamination is severe, they are fenced. There are 135 sq. km. (52 sq. mi.) of posted areas and 13 sq. km. (5 sq. mi.) of fenced areas."

035. These 230 contaminated areas should be identified by a number. Each should be surveyed and a legal description should be provided of the boundaries. This description should also be provided in terms of standard geographic coordinates. The words, shown on the posting sign, should be provided along with a description of the type of contamination that is suspected within the posted area.
63 This description should include a map, which indicates the areas where the contamination levels are highest, the peak readings in these areas and the suspected depth of the contamination. The description should also give the date of the first contamination and a rough estimate of the year that it might be cleaned up. All this information should be provided in the Final NTS EIS.

Project Shoal site

p. S-25, line 14, "Results of U.S. Environmental Protection Agency monitoring of the groundwater in the vicinity of the detonation demonstrate that the tritium concentration is below

PRIVATE CITIZEN 53 (CONTINUED)

the Safe Drinking Water Act limit for drinking water. Because of low groundwater velocities, migration of radionuclides to the nearest water supply well would take about 750 years."

64 036. Refer to comment no. 035. The nearest monitoring well is about three miles to the west and on the wrong side of the water divide. The nearest water supply well is much further away. The final sentence is based upon the assumption that no new water supply wells will be added to the area within the next 750 years. This is a highly unrealistic assumption given that the wells in this area are less than 50 years old.

Project Faultless site (Central Nevada Test Area)

p. S-25, line 22, "Tritium was not detected in the groundwater outside the chimney in concentrations above background until July 1972. At that time, it was detected at a depth of 236 m (774 ft) in one on-site monitoring well located near the test cavity.

65 037. The monitoring well was HTH-1.
The date should probably be changed to 1992 and replace the term "near" with 924 m (3,030 ft). If this represented an actual pulse of tritium leaving the test region then it moved about half a mile in 24 years.

COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Defense Program

p. S-25, line 22, "Evaluation of the alternatives in this EIS for the Defense Program does not identify significant physical environmental impacts that would change the environmental baseline established by past activities."

66 038. The environmental baseline should not be determined by the DOE based upon its past activities. This would surely violate the spirit and original intent of the NEPA process. The 935 nuclear tests conducted in and around the NTS through DOE's Defense Program Office has created one of the most damaged pieces of property in the United States. The DOE has admitted that many of the problems created by the nuclear testing program can not be fixed. Due to the highly classified nature of many of the activities that are conducted at the NTS, this site has not yet received the same level of environmental scrutiny as many other of the sites in the DOE's weapons complex. Clean-up at many DOE sites is increasingly being limited, not by the levels of the contamination but, by limited national economic resources and by limited political will. It does not make sense to further contaminate sites which we can not now fix and for which many future generations will be paying for. The environmental baseline should be based upon the condition of the site before it was withdrawn for restricted uses and before it underwent institutional developments.

p. S-26, line 5, "The construction of new facilities would have a minor, localized impact to the physical environment of the site, but would not lead to off-site impacts."

67 039. Replace the word "but" with the word "and."

68 The explosive dispersal of substantial quantities of

PRIVATE CITIZEN 53 (CONTINUED)

68 cont. plutonium-239 in the LYNER complex's underground rooms, which will then be abandoned after each shot, is not a minor impact.
Congress will not be happy when they learn that they will need to allocate funds, in order to safeguard the site, for the next quarter million years.
The last part of the sentence ignores the fact that major construction projects, at the NTS, rely, heavily, upon the vast contractor support facilities in North Las Vegas and require, close to 90 mile trips to and from the test site.

69 A federal agency which brags about its concern over fuel efficiency and conservation of energy resources should be held accountable for the energy it uses in maintaining the NTS.

p. S-26, line 6, "The most significant impacts would be the loss of income and jobs resulting from the elimination of the Defense Program."

040. Jobs that are oriented around cleaning up this country and developing renewable resources would be a far better investment of our nation's limited resources.

p. S-26, line 10, "Based on the more than 40 years of operations and information collected, many of the consequences of past Defense Program activities have been well-documented."

041. Because the Defense Program involves nuclear weapons a great amount of secrecy still hinders the full evaluation of the the environmental impacts of this program. The exact nuclear yields, given in terms of the number of thousands or millions of tons of high-explosive equivalent, is still classified for the vast majority of test. A full accounting of the vast quantities of highly radioactive waste materials, left by 40 years testing, has yet to be made for the 839 individual underground nuclear test performed on and off the test site. The ongoing site characterization program continues to expand but is now being restrained by economic limitations. The well drilling program is also restrained by the fear that it may reveal classified data if it is allowed to drill close to the nuclear explosion cavities. As a result, vast quantities of public funds are

70 being expended in looking into the symptoms of a problem rather than looking at the original cause of the environmental problem. The Defense Program Office has much of the so-called "source term" data, that the environmental researchers need, but refuse to release it.
The reason the NTS has undergone a great deal of study is due, largely, to the extremely hazardous nature of the activities that are conducted there. Despite the extensive safety precautions that have been taken, future generations will still have to pay a high cost for the experiments that have been conducted at the NTS.
Though an extensive amount of documentation exist, on the operations of the NTS, a substantial amount of documentation is either classified, incomplete or even missing. I suspect some information may even be distorted due to a desire to gloss-over potentially embarrassing problems.

PRIVATE CITIZEN 53 (CONTINUED)

p. S-26, line 113, "As discussed..., underground testing has resulted in unavoidable adverse impacts to portions of the land, geologic, and groundwater resources, making them unusable for most purposes."

042. The portion of the land affected is over 100,000 acres. The volume of geologic and groundwater resources affected probabaly approaches close to 50 cubic miles. Of course, additional impacts are avoidable if all nuclear tests are banned.

p. S-26, line 18, "Pockets of radioactive contamination surround each expended underground test location. The quantity of radioactivity remaining in the subsurface media can be estimated based on the half-life of the fission products."

71 043. Replace the word "quantity" with the word "level." The actual mass of each radioactive isotope should be provided in terms of the gram quantities as well as in terms of the
72 radioactive curie level. In addition, the massive quantities of hazardous materials, such as lead, that make up the nuclear explosion produced mixed-waste soup, should also be provided in the Final NTS EIS. The estimate, which is based upon the fission products, provides an incomplete, if not a deceptive accounting of the hazardous materials
73 which were dispersed by the underground nuclear testing program. The quantities of unfissioned plutonium-239 and neutron activation products should also be provided, in units of grams and curies, for each of the 839 tests locations. The contamination data for the off-site test locations in Mississippi, Alaska, Colorado, New Mexico and Nevada should be provided to those state's environmental pollution control departments.
The extreme cost of performing environmental assessments and follow-up activities requires that, now classified data, be rapidly declassified and be made available to the American public and their elected representatives.

p. S-26, line 22, "Much of this radioactivity remains captured in the original cavity, and thus is not available to leach into the groundwater."

044. Let me remind the reader that each nuclear explosion is like an instantaneous explosion of a small nuclear power reactor and the result is the vaporization, dispersal and condensation of its spent nuclear fuel and fission products. The highly radioactive materials, and often massive quantities of chemically hazardous components, wind up mixed with thousands of tons of resolidified rock. This is the host rock that once surrounded the nuclear explosive device. The blast cavity is generally connected to a vast network of fractures that extend radially out to several cavity radii. A small fraction of the mixed-waste materials are located in this fracture network. The vast majority, of the mixed-waste materials, resides in the giant pool of resolidified rock. The solidified rock is quite different, both chemically and physically, from the laboratory grade borosilicate glasses that are now being used to isolate and immobilize High-Level Nuclear Waste. Little is now known concerning the breakdown of the resolidified rock slag over

PRIVATE CITIZEN 53 (CONTINUED)

periods of thousands of years.
The resulting burial of nuclear waste, created by underground nuclear explosions, is not regulated by anything like the regulatory structure that surrounds the eventual disposal of other forms of nuclear waste such as Spent Nuclear Fuel and High-Level Nuclear Waste. For example, the waste generated by underground nuclear explosions is not required to be surrounded by multiple engineered barriers.

p. S-26, line 25, "Radioactively contaminated surface areas on the NTS resulted primarily from atmospheric testing of nuclear weapons from 1951 to 1962."

045. The most troublesome surface hot-spots at the NTS are the result of underground nuclear experiments that either were designed to vent radioactive materials to the surface or were intended to not vent, but did anyway. As part of the
74 United State's Atoms for Peace Program, Peaceful Nuclear Explosive tests were conducted which seriously contaminated large areas around their excavation craters. Some of these experimental tests were named Sedan (1962), Palanquin (1965), Cabriolet (1968), Buggy (1968), and Schooner (1968). The Baneberry test produced a spectacular venting when its containment system failed in 1970.

p. S-26, line 26, "Additionally, safety tests conducted at the surface from 1954 to 1963 resulted in the radioactive contamination of the soil."

046. Replace the phrase "safety tests" with the phrase "plutonium-239 dispersal experiments." Remove the phrase
75 "radioactive contamination of the soil" and replace with it the phrase "contamination of at least five square miles of soil with plutonium-239 particles."

p. S-26, line 27, "More than 200 radiation-contaminated controlled areas have been identified and mapped on the NTS."

047. Refer to comment no. 035.

p. S-26, line 30, "The DOE has established a monitoring program on and off the NTS to detect radionuclides in air and in groundwater.

048. Refer to comment no. 032.

p. S-27, line 5, "Models show that there will be no measurable tritium resulting from testing in areas that are not under control of the DOE or the U.S. Air Force."

049. Refer to comment no. 033.

Waste Management Program

p. S-27, line 17, "Waste management has been an integral part of the NTS operations since the establishment of the NTS in 1951."

050. If the waste management practices of the past were effective then why is it that the DOE estimates that $230 billion will need to be spent on environmental stabilization during the next several decades? The NTS was excluded from this estimate, not because it did everything right in the past. The present waste management program, at the NTS, deals

PRIVATE CITIZEN 53 (CONTINUED)

largely with handling problems created in the past. In addition, since 1951 the cost of waste management has skyrocketed.

p. S-27, line 18, "The environmental impacts related to the Waste Management Program are minor compared to those of the other programs."

051. Now that the Environmental Management Program has become a major component of the DOE budget, one must wonder what kind of environmental impact is caused by the other programs.

p. S-27, line 34, "Use of the craters for waste disposal is a beneficial use of lands that have been significantly and unavoidably impacted by past actions."

052. It would have been possible to avoid the creation of such craters if the test had been conducted deeper, in another area or, better yet, not at all.

p. S-28, line 1, "Even if low-level waste disposal were to result in the downward movement of contaminants to the deep subsurface, the incremental contribution of contamination to the radiologic source contained at and near the detonation would be negligible."

76 053. This should be quantitatively analyzed to provide a solid figure for the incremental contribution. This would involve revealing the radiologic source terms of the contaminants contained in the underground cavity. This might be difficult since the specific values remain classified.

Waste management site Performance Assessment.

p. S-28, line 26, "Preliminary results of the Area 5 Radioactive Waste Management Site Performance Assessment indicate that the risk of potential exposure to the public from waste disposal activities through surface water is not significant."

77 054. A similar analysis for the Area 3 Radioactive Waste Management Site should be provided in the Final NTS EIS.

p. S-28, line 31, "The limiting scenarios identified in the Area 5 performance assessment are the inadvertent intruder scenarios, which are postulated to occur thousands of years in the future when areas previously used for waste disposal would be mined or farmed."

78 055. Explain what is meant by the term limiting." What is being limited?

79 Considering, that the NTS has been in existence less than 50 years and few stable governments have lasted more than three centuries, then the "thousands of years in the future" concept may be unrealistic.

p. S-29, line 2, "The performance assessment is a continuous process used to improve the design and operation of DOE waste management facilities."

056. Perhaps this is also designed to justify the continued acceptance of the waste.

PRIVATE CITIZEN 53 (CONTINUED)

Environmental Restoration Program

p. S-29, line 7, "Approximately 10,000 acres of land would be disturbed during the restoration activities under Alternatives 1, 3, and 4. However, after restoration the land would be available for unrestricted use."

057. The Final NTS EIS should provide detailed maps which clearly show the locations of all the 10,000 acres of land that would be disturbed. In addition, a description should be provided that explains, the reason each piece property is being restored, what the restoration activity is expected to involve, and a description of any previous restoration that occurred in the past. The statement that "the land would be available for unrestricted use" may be misleading. The availability, apparently depends upon a number of factors. One of these factors has to do with the level of clean-up that is chosen, and in most instances, it appears that this has not been decided. Truly unrestricted use would involve the withdrawal of the land from restricted use by the DOE and a return to the public domain. Drilling and mining might also be allowed in this case. The term, "unrestricted use," used in the above quote, is likely to refer to land which remains under restricted use by the DOE. This land will probably be restored to a level suitable for the nearly unlimited use by the DOE. The Final EIS should provide details on the history and latest work of the "Nevada Environmental Restoration Project" This should include numerous references to the DOE/NV contractors such as the IT Corporation and to the latest internal progress report documents. Also refer to comment no. 002.

80 81 82

p. S-29, line 9, "Under Alternative 2, environmental restoration activities would cease. This would result in a condition of noncompliance with environmental requirements and limit the future use of the land."

058. The National Environmental Policy Act (NEPA) requires that only reasonable alternatives be presented in the EIS. The DOE seems to have structured Alternative 2 so that it is unreasonable. The existing agreements with the State of Nevada and the EPA may still require that some environmental restoration activities proceed under an Alternative 2 situation. The restoration of the NTS and off-site areas should not be held hostage by the DOE through its continuing control over the withdrawn lands. This federal agency must be held held accountable whether it controls the property or not.

83

Work for Others Program

p. S-29, line 19, "The Work for Others Program under Alternatives 1 and 3 is similar to historic activities and not expected to have siginificant impacts."

059. Since the Work for Others Program often involves internal interagency agreements and classified research, the public frequently has little understanding of what kind of work is involved and how this work might impact the environment.

PRIVATE CITIZEN 53 (CONTINUED)

Though, the statement above suggest that historic levels of activity will continue, the public has no way of evaluating the accuracy of this statement.

84 The DOE should provide the public with detailed descriptions and work breakdowns of its Work for Others programs during the last decade. This should include a list of clients. The brief, non descript entries, provided in Table S-1, are not sufficient for a analysis of the alternatives.

UNAVOIDABLE ADVERSE EFFECTS

p. S-29, line 26, "Unavoidable impacts result from a substantial adverse change to existing environmental conditions that cannot be fully mitigated."

060. The reader should note that the level of mitigation, that can be expected for an underground nuclear explosion, is essentially zero.

Alternative 1 - Continue Current Operations (No Action)

p. S-29, line 32, "All continuing programs and operations at the NTS and NAFR Complex would produce some environmental impacts that may not be possible to mitigate."

85 061. Replace the word "may" with the word "will."

p. S-29, line 34, "Past nuclear testing has resulted in the release of large quantities of radioactivity into the subsurface and the formation of subsidence craters."

062. Replace the qualitative phrase "large quantities" with the quantitative phrase of "tens of billions of curies."

86 Replace the term "radioactivity" with the phrase "radioactive materials" and follow with the phrase "and thousands of tons of hazardous materials." Before the word "subsurface" add the phrase "atmosphere, surface, the."

p. S-30, line 4, "Other testing and experimental activity in support of stockpile stewardship programs would have smaller impacts."

063. The qualitative term "smaller" should be replaced by a quantitative figure. The environmental impacts of the BEEF

87 complex and the LYNER complex should be included. The description of the subcritical test in the LYNER complex should describe the explosive dispersal of substantial quantities of plutonium-239 and the abandonment of the

88 plutonium contaminated shot rooms. Also Appendix J should be immediately declassified.

PRIVATE CITIZEN 53 (CONTINUED)

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Table S-3. Summary comparison of environmental impacts of the alternatives (7 pages)

Land Use, Site Support Activities, Airspace

p. S-31, (p.1)

Land Use

Alternative 1

89 064. Why would similar land uses be located on the borders? Why is the TTR, Shoal site and the Faultless

90 site at the CNTA not mentioned? Why is there no mention of

91 the property at the North Las Vegas complex as well as the DOE/NV Remote Sensing Laboratory at Nellis Air Force Base?

92 Why are the DOE/NV underground nuclear explosion test sites in Mississippi, Alaska, Colorado, and New Mexico not covered here?

Alternative 2

"Closure without environmental restoration would not meet U.S. Bureau of Land Management criteria for public use."

93 065. This may be true, but this statement has no place here if this federal agency is required, by law, to restore the surface of the public lands that it damaged. Also refer to comment no. 064.

Alternative 3

94 066. Remove all references to the New Solar Enterprise Zone activities in this and Alternative 3 since this project will not be located on the NTS and will now be independent of the listed alternatives.

Alternative 4

"Potential public uses of relinquished NTS lands would be... surrounded by buffer zones."

95 067. Why would buffer zones be needed, if the activities at the NTS are performed safely? "Figure 3-4. NTS Alternative 4 land use map," on page 3-24 in Volume 1, Part A, indicates that the potential relinquished lands would not be completely surrounded by buffer zones which are to here as

96 "Reserved Zones." The explanation, concerning the uses of the "Reserved Zones," should be detailed and very specific. If the relinquished land were to be surrounded by buffer zones, then what would be the depth of the buffer zones and what kinds of security barriers would be emplaced? Would the surrounding buffer zones reduce the area of the "Potential Turn Back Areas" shown in Figure 3-4?

"Land uses at the Tonopah Test Range, Project Shoal Area, and Central Nevada Test Area would be similar to those listed

97 under Alternative 1." This table does not "list" land uses under the Alternative 1 column. In addition, the term "similar" is far too objectively vague. The Final NTS EIS should provide far more specifics.

"Land-use designations and zones would be incompatible with

98 existing designations and zones." I suggest, that this invalidates the DOE's plans to retain control of the withdrawn lands under Alternative 4, thus creating another unreasonable Alternative. Since nuclear testing was halted

PRIVATE CITIZEN 53 (CONTINUED)

98 cont. in September of 1992, the DOE has been in violation of the four Public Land Order withdrawals which formed most of the test site complex.

Airspace

Alternative 2

"The NTS and Tonopah Test Range would experience reduced flight operations; otherwise, there would be no impacts to airspace."

99 068. The subjective term "reduced" is to vague and needs to be quantified. The reason for continued flight activities

100 also needs to be explained in detail. Apparently, the change of mission and perhaps, even an eventual change in the control of the land surface, under Alternative 2, will not affect the highly restricted status of the vast airspace, over and around the test site. All portions of the airspace, that are now designated as R-4808, should be redesignated in

101 order to return it to the domain of General aviation and the public. This includes the highly restricted airspace that surrounds the Groom Lake area and is presently managed by the DOE.

102 The airspace control authority, of the Federal Aviation Administration (FAA), should be transferred from the DOE to the Air Force and then back to the FAA, where Congress had originally intended the authority to reside.

103 The return, of the presently Restricted airspace to the public domain, should be applied to both Alternatives 2 and 4.

Geology and Soils

p. S-33, (p.3)

Alternative 1

"Testing impacts would include ground motion hazards and secondary seismic effects, soil contamination, alteration of natural drainage paths, and decreased surface stability. Impacts from other activities would include dust creation, soil contamination, and an increase in erosion potential."

069. Expand the first phrase, "soil contamination," with the

104 phrase, "massive, unremedable soil contamination with radioactive mixed waste."
follow the second occurrence of the phrase, "soil contamination," with the phrase, "with plutonium-239."

Alternative 3

070. Refer to comment no.069.

Alternative 4

105 071. Since the Defense Program activities create the most serious contamination problems, this Alternative would result in far less impacts.

Alternative 2

"Discontinuing operations would result in no additional impacts to geology and soils. However, the media that have been contaminated and altered from past activities would not be available for unrestricted use."

PRIVATE CITIZEN 53 (CONTINUED)

072. The immense quantity of deep soils, that have been massively contaminated and altered by past nuclear explosion activities, will never be available for unrestricted use, even if operations at the site are drastically increased. The

106 DOE has admitted, on many occasions, that the underground contamination is unremedable. In any case, and for any of the Alternatives, the underground test areas will never be deliberately made available for completely unrestricted use. Even, for the vast majority of those surface areas that are completely remediated, DOE/NV intends to retain control and restrict access to the public.

Hydrology (surface Hydrology and Groundwater)

p. S-34, (p.4)

Surface Hydrology

Alternative 1, 3 and 4

"There would be minimal potential impact from the alteration of existing dranage paths because of testing."

073. In some areas such as the extensive underground nuclear

107 testing areas the existing surface areas have been drastically altered. Continuing and expanded activities should not be compared to the already existing damage.

Groundwater

Alternative 1

"Total effects from continuing groundwater withdrawals are expected to be minor. Local effects to the Yucca Flat basin could be substantial if the annual water demand exceeds the basin's perennial yield."

074. New findings suggest that the area's existing recharge rates are much lower than originally estimated. Therefore, existing withdrawals are likely to be excessive. Since large amounts of the groundwater in Yucca Flat have been

108 made unusable, due to contamination and potential contamination caused by the underground nuclear explosion program, the estimated "perennial yield," of the basin, has been drastically reduced. This is a permanent loss of resources. Existing plans, are intended to work around around this loss.

Alternative 3 and 4

"However, the Solar Enterprise Zone has been estimated to require up to 5,550 ac-ft per year of water. Local effects to the affected basin such as those near Dry Lake Valley could be substantial if the annual water demand exceeds the perennial yield of the basin."

075. The sections, dealing with the Solar Enterprise Zone, should be removed for several reasons. Firstly, it is outdated. The technologies that will be used for the project will not

109 utilize anything close to the 5,550 ac-ft per year of water that was once estimated. In addition, a decision took place over a year ago to not site the solar facility at the NTS. And lastly, a division of the DOE which, for the last 50 years, has had the job of promoting nuclear power, should not be expected to be highly supportive of alternative energy

PRIVATE CITIZEN 53 (CONTINUED)

109 cont. technologies. I suggest, that the tone of this report clearly reflects a conflict of interest.

Alternative 1 and 2
"Increased waste quantities would not result in impacts."

076. Replace this sentence with, "Increased waste quantities will continue to result in significant impacts." This should be repeated in Alternative 1, 3 and 4. The operation 110 of the waste management facilities involves the use of large quantities of groundwater to wet the facility surfaces in order to control dust. In addition, surface barriers are often constructed to control surface water flow.
The fuel use, associated with the transportation of large quantities of waste, over great distances, has been ignored in this EIS study. The fuel usage constitutes a highly significant use of nonrenewable fossil fuels. The burning, 111 of this fuel, also results in the release of an equivalent quantity of hazardous emissions including the greenhouse gas, CO2. As a federal agency, that claims to be concerned with conservation of fossil fuels and the reduction of harmful air emissions, the DOE should have provided a detailed analysis of the fuel usage, associated with the operation of the NTS. The Final NTS EIS document titled, 112 "Transportation Study, contained in Volume 1, Appendix I, should contain an analysis of the environmental impacts, associated with the consumption of fossil fuels that result from the operation of the NTS.

Alternative 2
"Water demand would be reduced to that required for environmental monitoring and for potable water for the caretaker workforce."

077. The Final NTS EIS should describe the need, composition, 113 and size of this workforce. It should also describe why this workforce will need to be employed for thousands of years.

"Contaminated areas would not be restored, resulting in continued possibility of groundwater contamination."

078. The DOE has admitted that it is impossible to restore the 114 contaminated areas in and around the nuclear blast cavities. Groundwater contamination is not a possibility but a reality. I believe the quoted statement is highly deceptive. The stakeholders, including the general public and their elected representatives, deserve better.

Alternative 1
"There could be localized impacts related to underground tests conducted under or near the water table. Monitoring has revealed few instances of migration of radionuclides beyond the near test environment."

079. Replace the phrase "could be localized" with the phrase 115 "would be regional."
Maps, such as the one found in Figure 4.12-2., on page 4-526 of the Draft PEIS for Stockpile Stewardship and Management (DOE/EIS-0236), show the existing nuclear explosion test

PRIVATE CITIZEN 53 (CONTINUED)

sites, surrounded by a 1,000 foot radius region that represents the area that may be potentially impacted. The total impacted area could be more than 10,000 acres and the 116 impacted volume could exceed 50 cubic miles. Each, new, large, underground nuclear explosion could potentially impact nearly a quarter cubic mile of the surrounding underground environment.
In the second quoted sentence, replace the phrase "the near 117 test environment" with the phrase "an extensive monitoring exclusion zone." The scientist, who are contracted to do the monitoring work, are prevented, by DOE regulations, from collecting subsurface soil and water samples that lie close to the source of the potential contamination. Because many of the test cavities are relatively young and groundwater flow rates are quite low in the area, most of the potential contamination has not yet had a chance to migrate to the distant monitoring wells. As a result, the monitoring scientist are still coming up with mostly, completely clean samples. The environmental monitoring technical reports, produced under DOE/NV contract, show scores of clean samples collected during the past couple of decades. These same technical reports rarely provide any detailed information concerning the positional relationship of the monitoring points to the sources of potential contamination.
I have come to believe, that much of this monitoring and associated reporting, represent a perversion of fundamental scientific principles. These kinds of activities are not appropriate for an agency that promotes itself, to the American taxpayers and elected representatives, as a responsible scientific organization. This organization is now embarking on their "Science Based Stockpile Stewardship program" which will cost, us, and future generations, many tens of billions of dollars. I do not believe our nation or our nuclear weapons arsenal can afford this kind of perverted science.

Tonopah Test Range and Nellis Air Force Range Complex
All Alternatives
"Minimal impacts would occur at the Tonopah Test Range..."

080. Major clean-up efforts are being planned for at the TTR and NAFR Complex. This involves the removal of several inches 118 of plutonium-329 soil from dozens of acres, where Plutonium dispersal experiments were performed. These activities are likely to disturb the existing drainage paths. Remove the term "minimal."
Under Alternative 2 and 4, the DOE is likely to transfer some of its Defense Program activities to the Tonopah Test Range. 119 This kind of action would be likely to increase impacts on this range, therefore all the Alternatives should indicate an impact for this range

Visual Resources

p. S-35, (p.5)

Alternative 2
"Deterioration of facilities would occur over time.

PRIVATE CITIZEN 53 (CONTINUED)

120 081. Remove this statement since as mentioned in comment no. 077, the site will have a caretaker workforce. Again, an explaination of the purpose of this workforce is in order.

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UNAVOIDABLE ADVERSE EFFECTS (continued)

Alternative 1 -Continue Current Operations (No Action) (continued)

p. S-38, line 1, "At the Project Shoal Area and Central Nevada Test Area, geologic media that were contaminated by radionuclides would remain contaminated and unavailable for use. If groundwater were contaminated and could not be remediated, it would be unavailable for use as well."

121 082. The above passage should read, ""At the Project Shoal Area and Central Nevada Test Area, geologic media that was contaminated with DOE radionuclides will remain permanently contaminated and unavailable for use. The groundwater that is contaminated and can not be remediated and will be unavailable for use as well."

122 The term "remain" refers to a period of time of about a quarter million years. The Final NTS EIS should clearly explain why the geologic media and groundwater will be unavailable for use and the mechanisms that are being used and will be used, during the next quarter million years, to keep it unavailable. The DOE has admitted that the underground nuclear test areas can not be remediated, therefore DOE/NV should cease giving, the general public and the public's elected representatives, the impression that these facilities are fixable. Its time to stop pouring tax moneys into rat-holes that go nowhere.

Alternative 2 - Discontinue Operations

p. S-38, line 7, "Past nuclear testing has resulted in the release of radioactivity into the surface and the subsurface, and in the formation of subsidence craters. These conditions would persist if the NTS were closed."

123 083. Place the word "giant" ahead of the word "subsidence."
Replace the word "would" with the word "will."
Precede the word "if" with the word "even."
Replace the word "were" with the word "is."
These conditions will persist for hundreds of thousands of years, no matter which Alternative is chosen or will be chosen.
The DOE has admitted that the underground nuclear test areas can not be remediated, therefore DOE/NV should cease giving, the general public and the public's elected representatives, the impression that these facilities are fixable. Its time to stop pouring tax moneys into rat-holes that go nowhere.

p. S-38, line 15, "Although the rates of desert tortoise or habitat loss would likely decline relative to Alternative 1, there could be some loss because of security and monitoring vehicular activities."

PRIVATE CITIZEN 53 (CONTINUED)

124 084. The rate of loss of desert tortoise and habitat would be minuscule, when compared with all the other Alternatives, therefore this sentence should be removed. An increased level of security and monitoring will probably exist under all the other Alternatives, therefore this statement is not appropriate here.

p. S-38, line 20, "Because no environmental restoration projects would occur under Alternative 2, contaminated areas of the Tonopah Test Range would remain contaminated."

125 085. Follow the phrase "Alternative 2," with the word "extensive." End the sentence with the phrase "with kilograms of plutonium-239 particles. Perhaps the status of the plutonium-239 dispersal experiment sites on the Nellis Air Force Range Complex should also be mentioned.

126 Actually, I believe the quoted statement is deceptive, if not blatantly false, due to the existing laws that require federal agencies to cleanup their facilities before they leave, otherwise it appears that there is a serious breach in accountability.

p. S-38, line 24, "At the Project Shoal Area and Central Nevada Test Area, geologic media and groundwater contaminated by radionuclides would remain contaminated and unavailable for use."

127 086. Replace the phrase "geologic media" with the phrase "subsurface soil and rock." Replace the phrase "by radionuclides would" with the phrase "DOE's massive quantities of radionuclides will."

128 DOE/NV should explain, in the Final NTS EIS, what it means when it says the geologic media and groundwater would be "unavailable for use." It should explain, why the availability would be restricted, who the restrictions would be applied to, what techniques would be used to provide the restrictions, and how many hundreds of thousands of years these restrictions would need to be applied.
These, and the other 800+ underground nuclear explosion sites, that lie in Nevada, Mississippi, Alaska, Colorado, and in New Mexico, will not be remediated under any of the presently proposed Alternatives or under any new proposals. The DOE has admitted that the underground nuclear test areas can not be remediated, therefore DOE/NV should cease giving, the general public and the public's elected representatives, the impression that these facilities are fixable. Its time to stop pouring tax moneys into rat-holes that go nowhere.

Alternative 2 - Expanded Use

p. S-38, line , "At the NTS and NAFR Complex, the unavoidable adverse impacts of Alternative 3 would be similar to Alternative 1. Construction of new facilities would affect presently undisturbed habitat and eliminate those areas from other land uses."

129 087. Replace the phrase "similar to" with the phrase "much greater than." This Draft NTS EIS and especially the draft

130 Programmatic Environmental Impact Statement for Stockpile Stewardship and Management - February 1996 (DOE/EIS-0236) (draft PEIS SSM), suggest that major expansions of

PRIVATE CITIZEN 53 (CONTINUED)

130 cont. activities are envisioned for the NTS. Such an expansion of activities will further impact this site which has already experienced horrendous permanent damage from past activities. The rest of this expanded use section deals with the unavoidable adverse effects of peripheral issues such as the proposed renewable solar energy projects. Here, 90% of the space is taken up with descriptions of projects that will result in less than 10% of expanded use impacts. Clearly, DOE/NV remains primarily committed to expanding the secret work, associated with weapons of mass destruction, rather than work which promotes the conversion to renewable solar energy technologies.

p. S-38, line 29, "If the solar energy projects are implemented at the NTS, up to 2,400 acres of desert tortoise habitat could be lost from construction activities."

131 088. Remove this since a decision was made, over a year ago to not site these facilities at the NTS. DOE/NV seems to be far more interested in promoting nuclear power than renewable energy development. Also, refer to comment no. 075.

p. S-39, line 4, "At the Project Shoal Area and Central Nevada Test Area, geologic media and groundwater that may be contaminated by radionuclides would remain contaminated and unavailable for use." If groundwater were contaminated and could not be remediated, it would be unavailable for use as well."
089. Refer to comments no. 082.

p. S-39, lines 8 thru 20, This extensive section contains numerous references to the negative impacts of the proposed renewable solar energy projects.
090. Refer to comment no. 075.

Alternative 4 - Alternative Use of Withdrawn Lands

p. S-39, line 39, "The unavoidable adverse impacts to the Tonopah Test Range from DOE/NV activities associated with Alternative 4 would be similar to those for Alternative 1."

132 091. Replace the phrase "similar to" with the phrase "greater than." Because, some of the Defense Programs may be transfered to the TTR, impacts may increase.

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Table S-4. Summary cumulative impacts (3 pages)

p. S-42
Hydrology
NTS Program Alternatives
"Withdrawals are within the perennial yield amounts except in the cases of Yucca Flat and Dry Lake Valley, Where extractions exceed replenishment."

133 092. Recent findings by the Desert Research Institute suggest that much of the water that underlies Nevada is quite old and resulted from a much wetter historical period near the last ice age. As a result, many existing estimates of recharge rates may be in error. This, in turn, could mean

PRIVATE CITIZEN 53 (CONTINUED)

133 cont. that, in some cases, when withdrawals are thought to be within the perennial yield amounts, they may not be.

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MITIGATION MEASURES

p. S-44, line 1, "Geology--Under Alternatives 1 and 3, the DOE would continue to adhere to siting criteria to ensure radioactive contaminants from underground testing are contained."

093. Replace the phrase "to ensure" with the phrase "that reduce
134 the likelihood that."
Replace the term "contained" with the phrase "not promptly vented into the atmosphere."
Because of the highly secret nature of nuclear weapons research, the DOE has been provided with a great deal of power to self-regulate itself. As a result, the DOE and its predecessor agencies, have explosively dispersed tens of billions of curies of radioactive materials in to the earth's atmosphere, the oceans and into the underground environment in five states of our country. The estimated cost of $Z30 billion, that will be required to restore and stabilize some of the DOE's nuclear weapons facilities, is another example of cost that we and future generations will pay in return for DOE's self-regulation. This cost estimate did not include the underground test areas at the NTS due to
135 fact that DOE Headquarters knows that the form of containment, specified by the "siting criteria," is not fixable.
The containment standards, that are set by the Environmental Protection Agency and the Nuclear Regulatory Agency, in regards to the final geologic disposal of nuclear power reactor produced waste products, have no effect upon the way in which the DOE disposes the waste generated by its underground nuclear explosions.
For further information refer to comment no. 044.

p. S-44, line 12, "Groundwater--Under Alternatives 1, 3, and 4, institutional controls would be used to maintain water quality."

094. Replace the word "institutional" with the word
136 "questionable."
Replace the phrase "maintain water quality" with the phrase "prevent access to contaminated and potentially contaminated groundwaters, and the wells that access such areas.
In other words, what the DOE/NV is saying, is that they intend to maintain water quality by prventing access to the resources they have destroyed through contamination.
How generous! In the Final NTS EIS the DOE/NV should provide a detailed description of the history of
137 the institutional control program that has been in place at the ten offsite underground nuclear explosion sites which are located in Mississippi, Alaska, Colorado, New Mexico and Nevada.

PRIVATE CITIZEN 53 (CONTINUED)

READER'S GUIDE
TO THE
U.S. DEPARTMENT OF ENERGY
DRAFT
ENVIRONMENTAL IMPACT STATEMENT
FOR THE NEVADA TEST SITE AND
OFF-SITE LOCATIONS IN THE STATE
OF NEVADA

p. RG-2, Section 2, Specific Topics, Middle of page.
"Classified Supplement: Project-specific Environmental Impact Analysis (Lyner Complex)....Appendix J."

138 095. The vast majority of this document should be declassified in the spirit of Secretary O'Leary's most recent "Openness Initiative" requirements. This means, that unless the information could directly lead to an understanding of the equation-of-state-codes, then it should be declassified and provided to the public so they can evaluate the environmental consequences of the planned experiments at the Lyner Complex. I seriously doubt that a description of the explosive dispersal of plutonium-239 in underground rooms is going to reveal basic research data involving the equation-of-state codes.

139 For any information that remains "Classified," provide in the Final NTS EIS, a full accounting of the authority under which this document was classified. The DOE should cite, all the applicable DOE Orders and Regulations under which it was classified, the identity of the classifier, the level of the classification, any special handling requirements, such as LIMDIS (Limited Dissemination), the date or event for automatic declassification - classification review - or downgrading of classification level, and if applicable, the reason for extended classification.

140 In addition, Appendix J should be listed in the Table of Contents in both Volume 1, Part A and Part B. It should appear under Appendix I.

p. RG-4, Where Are the Sites in Nevada, Fifth bullet "Central Nevada Test Area..."

141 096. Like the Project Shoal description above, mention the real purpose of first series of tests that were to be performed at the Central Nevada Test Area.

MAP

142 097. Show the portion of the NTS which was once labeled "Area 51." Explain, in the sidebar why the DOE/NV does not acknowledge its existence and why it is not mentioned or covered in this Draft NTS EIS. Also show the locations of other DOE/NV facilities, in the Las Vegas area, which are not covered in this Draft NTS EIS.

143 098. The boundary of the Nellis Air Force Range Complex which lies just east of the Area 13 block was changed about seven years ago. Up-dating your map will not give away the family secret concerning Area 51.

PRIVATE CITIZEN 53 (CONTINUED)

Back Page -- "About NEPA" "The DOE EIS process follows these steps:" "Implementation Plan, which gives the results of the public scoping and provides a "roadmap" of how the EIS will be prepared."

144 099. Mention that this once provided a means for public input into the planning of the Draft EIS, but under a recent proposal, by the DOE, the Implementation Plan will no longer be provided as a means of public input.

This ends my comments on the Draft NTS EIS January 1996, Summary (DOE/EIS 0243)

PRIVATE CITIZEN 53 (CONTINUED)

Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada - January 1996
DOE/EIS 0243
Volume 2
Framework for Resource Management Plan

PUBLIC COMMENTS

1.0 INTRODUCTION
1.3 Policy and Procedures
p.1-2, line 15.
"The DOE/NV has developed and refined its technical site information (DOE/NV,1994a) to the point where it accurately depicts existing conditions and planned improvements."

100. Replace the term "accurately" with the term "approximately." 145
Replace the term "existing" with the term "past."
Replace the term "improvements" with the term "alterations."
The NTS has a massive, ongoing, characterization program which is attempting to better understand a great number of unknown factors at the site. Why are tens of millions of tax dollars being spent on these characterization programs if the existing conditions are accurately depicted?
DOE Headquarters released a Document titled "Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report - March 1995." A major portion of the NTS, the underground nuclear explosion test areas, were excluded from this study due to great uncertainties associated with these severely damaged areas. 146
Refer to p. 3-9, line 32.
"Monitoring is a crucial step in the RMP because the predictions of impacts and selection of suitable land uses that will result from the plan will be based on an incomplete understanding of the ecosystem on the NTS."
Refer to p. 2-5, line 24.
"Some of the decisions the DOE/NV will make during development of management actions will be based on a limited understanding of the interactions between natural and manmade systems on the NTS."
How is it possible to accurately depict planned improvements when the DOE weapons complex is undergoing major changes that involve many decision that are yet to be made? 147
Refer to p. 1-3, line 5.
"The RMP will not be used to identify or select future missions for the NTS; those task are the subject of other strategic planning efforts."

p. 1-3, line 3.
"The RMP will use the technical site information as a starting point and will ultimately gather other ongoing management and planning activities under one comprehensive plan."
101. My experience, with the technical site information, is that it reflects the highly secret, self-regulating nature of this institution. The majority of decisions are based upon information contained in internal documents rather than on the concerns of the surrounding communities. 148

PRIVATE CITIZEN 53 (CONTINUED)

p. 1-3, line 5.
"The RMP will not be used to identify or select future missions for the NTS; those task are the subject of other strategic planning efforts."
102. If this is true, then why does the example goal reflect a business as usual attitude, with a major emphasis on supporting the ongoing missions. Perhaps the ongoing missions are the future missions that are desired by DOE/NV. 149

p. 1-3, line 14.
"Some important principles of this approach considered in the plan are... consideration of ecological units and timeframes,..."
103. I hope the managers are looking forward for at least a quarter million years.

p. 1-4, line 5.
"The DOE/NV will use these procedures and planning systems to select and design land uses that are consistent with the goals identified by the RMP."
104. Remove the phrase "and design." 150
Perhaps a god can design land uses but I doubt that mere managers can do a better job.

p. 1-4, line 8.
"Land-use planning and resource management are the responsibility of the landlord program office at each DOE site. At the NTS, the Defense program performs these functions..."
105. Perhaps you ought to rename the landlord program the warlord program.
Seriously, its time for a radical change. Move the landlord program office functions over to the Environmental Protection Division. You can do it. "The times, they are a changing." Show the public and DOE HQ that you can change. The Cold War is over, priorities are changing and NTS may be facing some serious suit challenges.

1.4 Relation to the Nevada Test Site Environmental Impact Statement
p. 1-5, line 13
"This review will evaluate any potential conflicts between the RMP and the existing EIS and will be the basis for determining whether (1) the existing EIS should be supplemented, (2) a new EIS should be prepared, or (3) no further National Environmental Policy Act documentation is required."
106. The National Environmental Policy Act (NEPA) was enacted by Congress to ensure that Federal decisionmakers considered the effects of proposed actions on the human environment and to lay their decisionmaking process open for public scrutiny. The NTS RMP should provide the public and other stakeholders with a means to keep track of whether or not DOE/NV is fullfilling its promices in regards to the numerous sites it is responsible for. In order to do this the RMP needs to spell out, in detail, the various ways in which the stakeholders will be allowed to participate in the decision making process and in gaining full and complete access to the raw data that will form the basis of the decisions. For starters, DOE/NV needs to start utilizing is 151

PRIVATE CITIZEN 53 (CONTINUED)

151 cont.

internet World WIde Web Home Page to openly publish a full listing of all the documents, both internal and external, that deal with the environmental studies of its various sites. This should include planning documents which may have an impact on the existing conditions of the sites. For environmental reports which were performed under DOE/NV contract, the full documents should be downloadable using commonly used file transfer techniques. Whenever a contract report is listed it should also include a summary abstract of one page or less. These documents should be made available, on the internet, as soon as the contractors have written and submitted their reports to the DOE. They should include the contract number, the submission date, the name and contact information for the original writers of the reports. The reports should be made available, to the public, before the DOE has reviewed and edited the contents of the reports, even if the DOE considers the report to be in a draft state. As it is now, some of the DOE/NV's site environmental reports such as the "Nevada Test Site Annual Site Environmental Report-1994" (DOE/NV/11432-175) are released, internally, almost a year after the raw data is collected. All to often, the public doesn't become aware of such documents until years after internal decisions have been made that are based upon the findings in such documents.

1.5 Relation to Other Agency Resource Management Plans

p. 1-6, line 7
"In contrast, natural resources are not the primary management focus of the DOE's NTS missions. The primary resources required by the DOE NTS missions are the site support activities and large, remote areas found on the NTS. Existing site support activities and their relation to land-use on the NTS are an important consideration; therefore, these manmade resources will constitute a siginificant aspect of the RMP"

107. Obviously, "site support activities" are regarded as a "primary resource." I would like to suggest that the remoteness and the tight security, at the site, has functioned as a convenient resource that has allowed the local management to engage in activities that have devastated the environment of some areas of the test site. DOE HQ has indicated that the enormous clean-up cost, of the DOE's weapons labs, resulted from putting the defense mission ahead of the environment. Despite the DOE's "Lessons Learned" program, it appears that some segments of DOE's empire have not yet gotten the message. The statement that "manmade resources will constitute a significant aspect of the RMP" indicates to me that the writer has an extremely poor understanding of fundamental ecological principles and therefore is not qualified to be part of the RMP guidance team. There are many people who tend to believe that humans are like Gods who have the capacity to create resources. Such folks usually have a rather shallow understanding of the ultimate sources of the resources that man uses.

PRIVATE CITIZEN 53 (CONTINUED)

4.0 DRAFT RESOURCE MANAGEMENT GOALS

p.4-1, line 8
"They (draft goals) will be used to evaluate the effects of the DOE/NV activities on resource issues and to identify management actions needed for wise resource use and sound ecosystem management."

108. The wise use of resources should be based upon the judgment of environmental scientist, the public and the

152 indigenous communities who hold the original titles and claims to the land. The wise use should not be based upon the precedence of relatively recent activities. Sound ecosystem management is often incompatible with what DOE Defense Program managers consider to be a wise use of resources.

p. 4-1, line 10
"Also included are brief explainations of why the DOE chose these goals;...and, when available, map products documenting the DOE's knowledge of NTS resources and constraints."

109. Many of the map products, that are provided in the rear of this document, are quite impressive but they do not document the the DOE's knowledge. The elements of a map need to be carefully analyzed to derive knowledge from them. The discussions in the EIS text shows little evidence that such maps have undergone a through analysis. It is a simple matter for contracted services to provide DOE/NV with slick map products. It is a wholly different matter for useful information to be derived from the maps. Plate 7 shows land which could rate as some of the most severely damaged land in the world. The readers of this NTS DEIS are not likely to see that value expressed in the text. Maps can also be used to deceive and manipulate knowledge. DOE/NV has performed this function as well with most of their map products. The removal of Area 51 is a deliberate, unlawful

153 act which serves to deceive the general public, state and federal officials that hold executive office positions, Congressional representatives and their oversight bodies. It even serves to deceive DOE/NV contractors, DOE/NV managers, as well as the high-level analysts and decision makers at DOE HQ.

p. 4-1, line 18
"Possible solutions that may be considered include modifying a proposed mission to reduce impacts on a resource, modifying existing missions, or not achieving a goal."

154 120. After the word "include" insert the phrase "canceling the mission."

4.1 Existing Missions

P. 4-2, line 6
"Ensure new uses of the NTS do not interfere with critical operations of existing missions or create additional cost for those missions."
"Manage existing missions in a way that most effectively and efficiently uses the resources of the NTS."

PRIVATE CITIZEN 53 (CONTINUED)

35

155 111. Eliminate the proposed draft goal of supporting the existing missions and replace with the goal of closing down the the test site in one year. The business-as-usual option should not be the only option provided. In return, for the attempt to manipulate the "Framwork" document's draft goal proposal, the writers of the document should be required to substitute the close-down option as the draft goal.

112. The NTS resources that are important to me are the underground nuclear test areas, the areas where plutonium-239 dispersal tests were conducted and the off-site test areas in the States of Mississippi, Alaska, Colorado, New Mexico, and Nevada. These sites should be preserved by closing down the test site and then each individual test location should be placed on the National Registry of Historic Places. Public tours should be implemented so that future generations can learn that a person does not have to be an ogre in order to create massive environmental problems.

This ends my comments on the Draft NTS EIS January 1996, Volume 2 Framework for Resource Management Plan (DOE/EIS 0243)

PRIVATE CITIZEN 53 (CONTINUED)

36

This page received blank.

PRIVATE CITIZEN 53 (CONTINUED)

COMMENTS ON THE DRAFT NTS EIS - January 1996, (DOE/EIS 0243)
Volume 1

TABLE OF CONTENTS
(Part A) and (Part B)
Appendices
p. ix, line 17

156 113. Add, "Appendix J Classified Supplement: Project-Specific Environmental Impact Analysis (Lyner Complex) J-1"

157 The vast majority of this document should be declassified before it appears in the Final NTS EIS.

p. ix, line 6
"Appendix A Detailed Project and Activity Information A-1"

158 114. Mention here the Lyner Complex and the fact that it has a classified component.

Chapter 2 PURPOSE AND NEED FOR DOE ACTION
2.1 Background
P. 2-1, 30

159 115. Mention here the legal processes that the State of Nevada took that precipitated this EIS process. Include this history in the side box. This study was not voluntarily initiated by the DOE, because of new world events.

2.4 Nevada Test Site Programs
2.4.2 Waste Management Program
"Waste Definitions" sidebar
p. 2-9, line 31
"Classified Waste"

160 116. Provide a more detailed definition and cite the specific rules that govern this catagory of waste.

p. 2-10, line 16
"Specifically, these waste types include...and some classified waste."

161 117. The word "some" is to vague. Provide more specifics such as volume, mass and radioactive curie level. Provide a general breakdown of components including that portion which is Mixed-Waste due to hazardous components and describe where this waste is located.

Chapter 3 DESCRIPTION OF ALTERNATIVES
3.2 Alternatives Eliminated from Further Consideration
3.2.1 Site Uses Defined by Program
p. 3-26, line 28
"The NTS has historically been a multipurpose facility because of its remote location, arid climate, controlled access, and size. Fore these reasons, this alternative (single program) fails to meet the DOE's need for a site that can support evolving DOE missions."

118. Many of the stakeholders comments were ignored because they did not "meet the DOE's need." DOE needs to be reminded that they are supposed to be serving the public's needs.

162 The recent historical uses of the test site should not be used as a tool for locking in the future uses.

PRIVATE CITIZEN 53 (CONTINUED)

3.2.2 Site Closure with Complete Environmental Restoration
P. 3-27, line 3
"The DOE considered, but dismissed as too speculative, the alternative to fully remediate and close the NTS in the next 10-year period. In accordance with the DOE National Environmental Policy Act EIS policy, the NTS EIS evaluates site uses for the next 5- to 10-year period and because of the unique nature of past NTS activities (nuclear weapons test), complete site characterization and subsequent remediation activities could not be completed before the year 2030. Additionally, technologies to fully characterize and remediate certain areas of the NTS (such as the underground testing areas) do not currently exist and are not anticipated to be available in the next 10-year period."

119. The American people and Congress need to hear the DOE directly admit that it has permanently ruined lands upon which it was given stewardship responsibilities. It has has created "national sacrifice zones." Its time the DOE take responsibility for its actions rather than continue to suggest that some, currently unknown, future miracle technology will allow the remediation of all the public lands over which it has domain. This blind faith, that a future technology will be developed, is misleading. It is like dangling a carrot in front of a mule in order to get it to move. This suggested promise, of a future technological cure, has resulted in a vast waste of public funds on many technologies that failed to produce results. We and future generations should not be forced to pay for DOE's inability to admit guilt.

3.2.3 Site Closure with Direct Relinquishment of Surplus Lands to the Sovereign Nations, the Public, Nye County, or the State of Nevada following Remediation.
p. 3-27, line 14
"The DOE considered, but dismissed as unreasonable, the alternative of relinquishing the withdrawn NTS land directly to the sovereign nations, the State of Nevada, Nye County, or the public. This alternative would require a redirection of the policies of the U.S. Bureau of Land Management, which administers the federal lands that are withdrawn for use by the DOE. Current U.S. Bureau of Land Management policies and regulations require lands that were formerly withdrawn from the public domain, and are no longer needed, to be relinquished back to the U.S. Bureau of Land Management. For this reason, this alternative was considered too speculative and outside the scope of the NTS EIS."

163 120. In this last sentence, it starts out by saying "For this reason..." DOE/NV needs to expound further and clarify what it is referring to when it says "this."

I understand that the BLM is not interested in taking on the the responsibility for such seriously contaminated land.

164 This section should also mention the pending legal actions, between the State of Nevada and the DOE, concerning the charge that DOE/NV is out of compliance with the original purpose for which the land was withdrawn.

The federal government would be setting a bad precedent if it allowed the DOE to retain control of public property, into the distant future, because this agency permanently

PRIVATE CITIZEN 53 (CONTINUED)

contaminated the property with plutonium isotopes that have a 24,000 year half life. U.S. Federal agencies should not be allowed to gain permanent control of the public's lands.

Chapter 4 AFFECTED ENVIRONMENTS
4.1 Nevada Test Site and Surrounding Areas
4.1.1 Land Use
4.1.1.1 Public Land Orders and Withdrawals.
p. 4-9, line 11
"Under Public Land Order 1662 (June 20, 1958), approximately 38,400 acres were reserved for the use of the Atomic Energy Commission in connection with the NTS. Management of this land area has since been delegated to the U.S. Air Force."

165 121. The DOE should provide an historical listing of documents which cover this delegation of authority to the U.S. Air Force. The latest document should be cited and included in an unclassified NTS EIS Appendix.

166 This Appendix should also include copies of P.L.O 1662 and the other public land orders and related special use documents which cover the land withdrawals at the off-site undreground nuclear explosion sites in Mississippi, Alaska, Colorado, New Mexico and in Nevada.

167 I understand that this draft document contained inaccurate references to the present legal status of the the lands at the off-site test areas. For example, the Project Shoal site was not returned to the BLM as stated in this Draft EIS.

p. 4-10, MAP
"Figure 4-3. NTS land withdrawals and Memorandum of Understanding"

168 122. Retitle this as "NTS lands covered by P.L.O.s and Memorandum of Understandings"
Label the area, covered by P.L.O. 1662, with the number designation "51." Also include the special land withdrawals that are associated with the Yucca Mountain Project.

169 NOTE: Of the scores of NTS maps, which are presented in this eight volume Draft NTS EIS document, the one map on page 4-10 is the only one that includes the area that was withdrawn under P.L.O. 1662 (Area 51). A small number of maps show open border lines where Area 51 is attached but the vast majority of maps show no indication that part of the test site extends from the northeastern border region. For almost 40 years, DOE/NV has created and distributed hundreds of tons of public and internal documents containing deliberately deceptive maps of the region that is assigned to them. This enormous mass of documents has been distributed to the general public, the public's elected representatives, oversight committees federal agencies such as the Environmental Protection Agency and the Nuclear Regulatory Commission, state, county, and city governments and the Sovereign Native American Nations and communities. These inaccurate maps have also been seen, utilized and redistributed by the upper-level managers at DOE Headquarters in Washington, DC. These maps have even been incorporated into the reports of

PRIVATE CITIZEN 53 (CONTINUED)

the Inspector General. DOE HQ's recent Openness Initiative program and its expanded declassification program, seem to have no effect upon this big lie.

4.1.1.2 Land-Use Designations.
Area 1
p. 4-13, line 28
"The Lyner Complex is a mined underground complex in Area 1 that is available for dynamic experiments and hydrodynamic tests that cannot be conducted aboveground because they may contain hazardous materials."

170 123. Replace the word "available" with the phrase "is used for."
Replace the word "dynamic" with the phrase "subcritical hydronuclear."

171 Provide a detailed explanation as to why these tests cannot be conducted aboveground like other tests that contain hazardous materials.

172 Replace the word "may" with the word "will."
Replace the phrase "hazardous materials" with the phrase substantial quantities of plutonium-239 and high-explosive compounds. Since the official use of the term "hazardous" does not include radioactive materials, the Final NTS EIS should make it perfectly clear what these experiments will involve.

173 The description should describe the up-coming experiments which will explosively disperse plutonium-239 particles in bare underground rooms which will then be abandoned. Indicate an upperbound figure for the mass of plutonium-239 that will be used in the experiments.

4.1.5 Hydrology
4.1.5.2 Groundwater
RADIOLOGIC SOURCES IN GROUNDWATER
Table 4-27. Remaining isotopic inventory under or within 100 m (330 ft) of the water table
p. 4-160 and 4-161

174 124. Describe in detail why this table is broken into two parts, the isotopes that are "Not On Pahute Mesa" and the isotopes which are "On Pahute Mesa." Provide a detailed, legal description of the boundaries that enclose the tests on Pahute Mesa. Describe if the "Not On Pahute Mesa" tests include the underground nuclear explosion tests in central Nevada and other states. Provide the quantities, of the isotopes in terms of their mass in grams as well as in curies. Provide a total figure for the mass of plutonium-239. I figure it to be around 0.7 metric tons.
State the number of underground nuclear explosions that were considered in the formulation of this table.
Provide the same kind of data for all underground nuclear explosions and declassify the existing source-term data for the 800+ individual tests.
Describe, in detail, the various regions of the underground environment that may be potentially effected by radioactive contamination. Describe the total volume, in terms of, cubic kilometers that may be potentially involved.
Better yet, computer model the potentially affected area around each of the 800+ nuclear tests.

PRIVATE CITIZEN 53 (CONTINUED)

41

Volume 1, Part B
GLOSSARY
p. GL-1
Add the following terms:
Big Explosives Facility, BEEF
Corrective Action Unit
Cut and Cover
Deep subsurface
Dipole Hail
Fission Product
Geologic
Geologic media
Indefinite
Neutron Activation Product
Operable Unit
175 Protective levels
Radioactive Source-Term
Render-safe Mission
Source Material
Source-Term
Special Nuclear Material
Subcritical Test
Subsidence
Surface subsidence
Surfical soils
Subsurface
Threat-nuclear-device simulants
Unavailable
Work for Others Program
Zero Yield

176 For "Classified waste" on p. GL-4, line 18, cite the specific rules and regulations that describe and define this material as well as describe how information on it will be handled.

Volume 1, Part B
INDEX
p. Ind-1
Add the following terms:
Area 27 Complex
Big Explosive Experiment Facility (BEEF)
Central Nevada Test Area (CNTA)
Cut and Cover
DAF (Device Assembly Facility)
Device Assembly Facility (DAF)
177 Dipole Hail
Double Tracks
Faultless
Fission Products
Geologic Media
Indefinite
Low-Yield Nuclear Explosive Research (Lyner site)
Lyner site (Low-Yield Nuclear Explosive Research)
Media
Nevada Environmental Restoration Project (NV ERP)
Neutron Activation Products

PRIVATE CITIZEN 53 (CONTINUED)

42

Operation Roller Coaster
Plutonium
Project Faultless
Project Shoal
177 Project 57
cont. Radioactive Source-Term
Render-safe
Shoal
Source-Term
Subprojects, (NV ERP)
Threat-nuclear-device simulants
Work for Others Program

178 A great many of the page numbers in the index point to pages that contain no reference to the index term. For example: For the term "Device Assembly Facility," 14 of the 23 pages listed, were incorrect pointers.

This ends my comments on the Draft NTS EIS January 1996, (DOE/EIS 0243) Volume 1, Parts A and B

++

Vernon J. Brechin
May 3, 1996

PRIVATE CITIZEN 54

May 2, 1996

DEPARTMENT OF ENERGY
P. O. Box 14459
Las Vegas, Nevada 89114

TO WHOM IT MAY CONCERN:

This is in reference to your article in the Salt Lake Tribune on March 6, 1996, "Bitter S. Utahns Tell DOE to Close Nevada Test Site".

In December 1987, My Dear Mom, Afton Starley Law - Delta, Utah passed away from cancer due to the downwinds from the atomic blast. She was diagnosed with breast cancer in 1986 followed with a mastectomy, then in the summer of 1987 she traveled to Provo daily for radiation treatments for 7 weeks.

We still have family that live in Millard County and are concerned about the downwind. I am very concerned about my father, my children and their spouses, my grandchildren, my husband and myself.

There are lots of people from Millard County that have been diagnosed with different types of cancer. I had two very dear friends that are deceased now, because of the downwinders.

1 PLEASE SHUT THE NEVADE TEST SITE DOWN.

We have had enough heartache from the loved ones and friends that have been diagnosed with cancer and enough suffering from the patients. Plus the expense and hardships the families have to endure. PLEASE SHUT THE NEVADA TEST SITE DOWN.

Sincerely,
Linda Mabbutt
LINDA MABBUTT
P. O. Box 37
Delta, Utah 84624

PRIVATE CITIZEN 55

Dated : 4/29/ 96

Donald R. Elle
Director Environmental Protection Division
U. S. Department of Energy
Nevada Operations Office
PO Box 14459
Las Vegas, NV 89114

Dear Mr. Donald Elle :

I write to submit my comments on the draft environmental impact statement, for the Nevada Test Site (NTS) and off-site locations in the state of Nevada, for the continued operations of the NTS and other activities of the US Department of Energy (DOE).

The Draft EIS in general is very comprehensive regarding its coverage of the environmental aspects. This comprehensivness has also resulted in complexity. It is rather difficult for a viewer to understand the sequence of information provided.

The nature of this EIS is very different from most EIS's. It covers a number of sites scattered in the state of Nevada. Every alternative also has different sites. Alternative 1 and 2 are proposed on the same sites but Alternative 3 and 4 have additional sites of Eldorado Valley, Dry Lake Valley and Coyote Spring Valley.

The complex description of the environment and the environmental effects is hard to follow. Chapter 4 deals with a description of the related environment in great detail, for example, in the section covering Socio-Economics, employment rates in the US, in State of Nevada and in the respective areas are discussed. However, to compare these figures, one has to page over to the next chapter.

1 Although details are necessary and provide an in-depth view of the situation, the EIS should be more understandable. NEPA has set the page limitation requirements for the EIS's and in my view this EIS does not comply with this requirement.

2 The comprehensivness of the document also leads one to believe that most of the critics of this EIS will view only the summary and receive a general idea of the proposed project. This being the case, the summary for this EIS should provide all the necessary information to fully understand the situation. It should introduce all the aspects of various sections, which are detailed later in the document.

PRIVATE CITIZEN 55 (CONTINUED)

3 The socio-economics section of the EIS summary, only discusses the work force residing in each county, the population of Lincoln County and the unemployment rate. A more detailed description of the socio-economics section should be included in the summary.

4 For example the average annual earnings per job in Nye county tells one more of the socio-economic conditions than just its population. There is no description of economic indicators of any sort in the summary. It is absolutely impossible for a person to get any feeling of socio-economic conditions in these areas.

The summary does not have to be too comprehensive, but it should serve its purpose, it should summarize. In this case where the EIS is very lengthy and difficult for the public to digest, a very through summary is needed. In many cases the summary is the only part the public will read and it should include all the necessary information. After reading the socio-economic summary, the average reader should have a through understanding of the conditions on the sites of the proposed action.

I hope my comments are positive and can be used in the process of improving this Environmental Impact Statement. Thank you for your time.

Sincerely,

Saima Qureshy.

PRIVATE CITIZEN 56

April 30, 1996

Mr. Donald R. Elle, Director
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, Nevada 89114

Re DEIS for the Nevada Test Site and Off-site Locations in the State of Nevada

Dear Mr. Elle,

1 The information contained in the DEIS for the Nevada Test Site and Off-site Locations in the State of Nevada is not adequate to allow a reasonable judgment on the relative merits of the Alternatives. This applies in particular to the Waste Management and Environmental Restoration Programs. In view of the inadequacy of data, described below, an acceptable Alternative would combine Alternative 2 for the Waste Management Program and Alternative 4 for the Environmental Restoration Program. I do not see in the data base any justification for disposal of radioactive and hazardous wastes because of the primitive nature of the monitoring. A feasible solution while the monitoring is brought up to an acceptable standard, is disposal only of nonhazardous wastes and storage of all others in monitored above-ground retrievable structures.

2 The DEIS fails to provide even the most elementary site-specific characterization of the vadose zone in which most contaminants now exist, by virtue of underground tests and waste disposal. There appear to be no adequate monitoring systems in place to assess the distribution and transport of contaminants in the vadose zone. The nearest thing to data is the casual mention in the Summary (p. S-28) of field studies in support of assessment models, "which include monitoring of soil moisture and chloride ion concentrations." The conclusion reached (p. S-28) that "These studies and the absence of contamination support the conclusion that no groundwater pathway exists beneath the Area 5 Radioactive Waste Management Site" is like the conclusion reached for the Beatty, Nevada LLRW site, which recently has been shown to have contaminated the entire vadose zone laterally from and below the disposal trenches. The groundwater, sampled when the boring was completed in 1993, also is said to have shown no contamination. This suggests, since both at Beatty and NTS, groundwater is moving and volumes are large, the need to thoroughly monitor the vadose zone through which most contaminants will have to move to get to groundwater.

3 The report p. 4-168, Affected Environment, that 5 of 8 borings show evidence of transport of radionuclides in groundwater plus three additional USGS-monitored wells showing low levels of tritium contamination (p. 4-168-169) do not support the conclusion reached in the summary. Rather, this information attests to the inadequacy of the information—admitted on p. 4-168—on groundwater contamination. The virtual absence of information on contaminant distribution in the vadose zone indicates that much more thorough study of site-specific characteristics and mechanisms of transport is needed before further disposal of low-level radioactive and hazardous wastes is contemplated.

4 The discussion (p. 4-161) of leaching of radionuclides from rubble and glass appears to be incorrect. The statement "Depending on solubility of the radionuclides, the groundwater dissolves the residues until chemical equilibrium is reached" appears to assume that the groundwater is static.

The statement (p. 4-161) that, with time, "a better understanding of the true hydrologic source term could be had, like that on p. 4-168 that "evidence for transport of

PRIVATE CITIZEN 56 (CONTINUED)

radionuclides produced by underground nuclear testing is scarce," indicate the need for substantial upgrading of monitoring and actual distribution studies before contemplating further radioactive and hazardous waste disposal.

4 (cont.) Knowledge that radionuclides were dispersed into fractures reopened or created by underground tests (p. 4-162, 163) is not sufficient. Actual magnitudes magnitudes and 3-dimensional distributions of specific radionuclide contaminants should be goals of thorough characterization to allow establishment of a base line for determining redistribution rates and mechanisms.

From the statement on p. 4-163, there appears to be no information available on the quantities, types, or distributions of nonradioactive contaminants remaining in the subsurface. This knowledge would seem to be an essential item in thorough characterization for remedial restoration operations.

5 In view of the frequent citations of on-going USGS studies relevant to DOE's mission for the NTS and off-site test areas in Nevada, why is the USGS not a Cooperating Agency?

6 The state of ignorance about the nature, level, and distribution of contamination of the vadose zone at the Waste Management sites indicates the need for a fifth Alternative focused on thorough site characterization, comprehensive monitoring, thorough evaluation of mechanisms and rates of movement of contaminants in the vadose and saturated zones, and accelerated Environmental Remediation. Because the data presented in the DEIS are inadequate to allow respondents to reasonably decide among the Alternatives presented, I recommend revision that allows this fifth Alternative to be reviewed.

Sincerely,

Howard G. Wilshire

Howard G. Wilshire Ph.D.
1348 Isabelle Ave.
Mtn. View, CA 94040

PRIVATE CITIZEN 57

May 1, 1996

CERTIFIED MAIL - RETURN RECEIPT

Donald Elle, Director
Environmental Protection Division
U.S. Department of Energy
P.O. Box 14459
Las Vegas, NV 89114

Subject: additional comments on the NTS EIS process

Dear Mr. Elle:

You may recall that I was the person who pointed out the connections between the DOE's Nevada Test Site, and the Air Force's secret airbase at Groom Lake (also known as Area 51), at the Las Vegas NTS EIS hearing.

The Nevada Operations Office appears to be delaying the handling of my Freedom of Information Act (FOIA) case NV960311101, dated March 6, 1996, until after the EIS public comment period. In my FOIA case, I sought the classified appendix to the NTS EIS (on the Lynxr complex), and all memorandums of understanding between the DOE and the Air Force concerning the Groom Lake facility. Another activist has found a U.S. Geological Survey document that clearly shows Area 51 being adjacent to Area 15. Area 51 is what is obliquely referred to as land withdrawn under Public Land Order 1662 in Volume 1, Chapter 4, Part A of the NTS EIS. We can not provide additional information at this time identifying this document, until it has been used as evidence in the lawsuit against the Air Force, on behalf of the Area 51 workers who were exposed to toxic chemicals at the base (some of the workers have died since the lawsuit was filed several years ago.)

1 Another item that is not discussed in the NTS EIS is Sandia National Laboratory's FALCON nuclear pumped laser program [1], that evolved from work on the Strategic Defense Initiative (SDI or "Star Wars") [2] and a program code-named Centaurus for a reactor driven laser weapons [3]. Sandia's Public Affairs Office has not returned our call seeking the current status of the FALCON program. Is FALCON going to be based at the Nevada Test Site, as planned by Sandia? If so, why was this not mentioned in the EIS?

Sincerely,

Paul McGinnis

Paul McGinnis
P.O. Box 28084
Santa Ana, CA 92799

5151 McFadden Avenue
Huntington Beach, CA 92649
phone: (714) 753-7864 x294
Internet: TRADER@cup.portal.com
http://www.portal.com/~trader/secrecy.html

References

[1] Dept. of Energy, Sandia National Laboratory. Ronald Lipinski. Reactor pumped laser facility at DOE's Nevada Test Site. SAND 94-0074C. January 1994.
[2] Vincent Kiernan. Tests to verify if nuclear powered laser suits civilian use. Space News. September 17-23, 1990. Page 12.
[3] Dept. of Energy, Lawrence Livermore National Laboratory. Victor George. Centaurus Program: Reactor Driven Laser Weapon. [censored and declassified document]

Dr. Donald K. Elle, Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 14459
Las Vegas NV 89114

May 1, 1996

Dear Dr. Elle,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Nevada Test Site and Off-site Locations in the State of Nevada, January, 1996. The following are my comments on the NTS EIS.

1) The overall layout of the document is very good.

1 2) There seems to be undue reliance on the 1977 Environmental Impact Statement.

2 3) Which is the Preferred Alternative?

3 4) The Resource Mgt. Plan in concept is good. However the goals will be difficult to accomplish.

4 5) It is difficult to make decisions when studies that would enhance decisions have just begun or are only in the early stages.

Page 2 Comments to NTS EIS

5 6) When comparing impacts of Alternative 1 and Alternative 3, referring to impacts of Alt. 3 as "similar" to Alt 1 is unacceptable. How can they be similar when activities are increased, scaled upward, etc.

6 7) In Vol 1, Appendix A, pg A-59 it is stated that a Solar Enterprise Zone has been established. How did this project proceed from no mention at all in the Notice of Intent to feasibility study in the Implementation Plan (Feb 94 thru 1995) to utility-scale solar-generating facility? I do not believe that this is ~~not~~ the proper format for this type of analysis. By inclusion in the EIS this implies acceptance as a viable project. This and the other projects are proposed only.

8) It is stated several times that various projects may require its own EIS. Any program of significance will require an EIS. (40 CFR 1508.27)

7 9) On pg A-74, line 14, Vol 1, Appendix A, it is stated there is an extensive radiation monitoring network in areas ~~in~~ surrounding the test site. Several of these stations have been taken off line. Four air sampling stations have been reassigned to the Yucca

PRIVATE CITIZEN 58 (CONTINUED)

Page 3 Comments to N128&18

Mercury Project and several wells are now called Exercise (pg 4-30, Vol 1, Part B). These stations should remain part of the historical monitoring system to maintain continuity of data. The four air monitoring stations dedicated to the IMP and well UE-19c should remain on line because they are located where they are needed most.

8) The table on pg 4-8, Vol 1 Part A indicates underground estimated activity. A table similar to this should be created to indicate contamination in Areas 11 & 13.

9) There should be a chart created for radioactivity in wells on & offsite similar to that on pg 4-145, Vol 1, Part A, for surface waters.

10) The Environmental Restoration Program, pg 5-7, Vol 1, Part B, raises inappropriate expectations that land clean up will allow a future use in the near future. This is unrealistic in light of on-going studies such as Basic Environmental Compliance and Monitoring Project and others.

11) In regard to the Solar Enterprise Zone
a) as in comment #7, designation in Alt 1 & 3 as a foregone conclusion

PRIVATE CITIZEN 58 (CONTINUED)

Page 4 Comments on N128&18

is inappropriate for the E&18 (in my opinion).

b) Isn't this "project" something private industry should be doing?

c) Who pays for this? What is purpose?

d) Who are the customers? Who benefits?

e) Who retains profits? Who gets power?

f) On page A-76, Vol 1, Part A it is stated that a 138 kV power line proposal was withdrawn by Nevada Power. Why then is this solar steam plant being proposed? Has "need" been demonstrated?

11 (cont)

12) There is a discrepancy in statements on pg 5-105 and 5-37, Vol 1 Part B. "Recognition" of Devil's Hole National Monument (pg 5-37) conflicts with "no impact" (pg 5-105). I strongly disagree that no impacts will occur with increased pumping for this project. The amount as stated has never been pumped before

13) Regarding your statement on pg 5-104, line 33 Vol 1, Part B, using applicable laws, the alternative energy project

PRIVATE CITIZEN 58 (CONTINUED)

Page 5 Comments on NTSEIS

13 cont. potability would be vulnerable (I believe you have it backwards)

14 1) On pg 5-160, lines 18-24 Vol 1, Part B, recharge is included in the 8,100 ac-ft/yr calculation. (R=2100; U=5800; total 8,100) If Solar Enterprise Zone is built, the assumption is 1-3000 ac-ft/yr above recharge. I believe it is incorrect to state the recharge value within the underflow value when claiming to "tap" underflow

15 2) If water is withdrawn at a greater rate than the recharge rate then mining of water occurs. Mining of underground water has not been addressed.

Thank you for taking the time to read my comments.

Respectfully,

Becky Gurka

5303 Stampa Ave
LV, NV 89102

PRIVATE CITIZEN 59

Comments to
The Environmental Impact Statement
for the
Nevada Test Site and Off-site
Locations in the State of Nevada

First issue: Government to Government
President William J. Clinton's Executive Order regarding Government to Government
DOE's own American Indian Policy
Government to Government is not being met, meeting with people from the tribes is not Government to Government and should not be considered as Government to Government. This Executive Order and Policy can only be followed when the DOE personnel and contractors meet with the governing bodies of the tribes, and meaningful information can be exchanged. This can not happen if the DOE does not inform the governing bodies on the actions that may affect the tribe and tribal lands. An information meeting will not be considered Government to Government.

1

Second issue: NEPA
NEPA states that the tribes that may be impacted be consulted with. An informational meeting is not consultation. Consultation is much like communications, there needs to be knowledgeable and meaningful two-way dialogue. If one of the parties does not know what the other party is talking about, a knowledgeable and meaningful two-way dialogue can not exist.

2

Third issue: Transportation
No transportation study has been conducted on reservation lands. Since the reservation is located in the transportation corridor, studies should have been conducted by DOE.

3

Fourth issue: omitted subjects
The transportation section omitted the Moapa Band of Paiutes reservation lands.

4

The president's Executive Order regarding Government to Government.

5

The DOE's own American Indian Policy.

6

Studies that should have been conducted on reservation lands, i.e. transportation.

7

Fifth issue: Appendix G
I do not see the historical and cultural ties that the Las Vegas Indian Center claims to have, to the Nevada Test Site. The Las Vegas Indian Center serves the American Indians from other parts of this country. The Board of Directors is made up of people, not necessarily from this area. Also the there is no membership, in the Las Vegas Indian Center. Therefore it is hard for me to make the connection of the Las Vegas Indian Center having ties to the Nevada Test Site, Historical or Cultural. There are no comments about; socio-economics, transportation, possible health effects, and Environmental Justice. In Appendix G it is stated that the tribes and tribal people could have input, but input was received with a fight. In my opinion Appendix G is the writings of eight people, and I as a member of a Federally Recognized Tribe can not accept this writing. Some members of this writing team are not from this area, the coordinator and a member of BARA acted as though they were doing the actual writing. It was with these two individuals that I had to argue my points with. Also Appendix G is written as being from a non-native stance, it seems as though someone on the outside looking in has written Appendix G. Statements made were very soft and should have been made stronger, Appendix G seems to have been written to satisfy DOE's needs. 8

Sixth issue: culture
This land that I walk on was put here for us to manage and take care of, the plants and animals were put here for our use. In order for us to continue to exist on this land we must protect what has been placed here for us. The land, water, air, animals, and plants are all part of my culture and my culture is what makes me who I am.

Calvin Meyers, tribal member
Moapa Band of Paiutes

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PRESENTATION 1

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING

(EIS PRESENTATION - DON ELLE)

Held at the

CASHMAN FIELD CENTER
850 Las Vegas Boulevard North
Las Vegas, Nevada 89101

on

March 26, 1996
Beginning at
6:10 p.m.

TRANSCRIBED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

KEY to Transcript Symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "verbatim -- in the exact words; word for word."

Dash: [--] Indicates a sentence not completed by speaker.

Data: [...] Indicates something was said by the speaker, which, as spoken, is neither audible nor decipherable to the reporter or from the taped cassette recording.

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Parentheses: ( ) Words within parentheses are reporter's explanatory comments.

VOICE: Indicates an unknown speaker.

Uh-huh: Indicates affirmative answer.

Huh-uh: Indicates negative answer.

LAS VEGAS, NEVADA, MARCH 26, 1996, 6:12 P.M.

ENVIRONMENTAL IMPACT STATEMENT PRESENTATION

CONDUCTED BY

DON ELLE, DIR. OF THE ENVIRONMENTAL PROTECTION DIVISION

ELLE: Welcome to the Nevada Test Site Environmental Impact Statement. My name is Don Elle. I'm Director of the Environmental Protection Division of the Department of Energy's Nevada Operations Office. And what I'm going to do is give you some information about what this document is and what it contains; and give you an opportunity to ask some questions, hopefully that I'll be able to answer in the general sense. And then we'll take a break. And then we'll have an opportunity for you to give us comments on what you've read and what you think about what we've done. And we have a Court Reporter that will be recording those comments so we can formally address them in the Final EIS.

And before I get started, I want to introduce the Manager of the Nevada Operations Office, Terry Vaeth; and the Acting Deputy Manager,

Joe Fiore, as interested observers in how this process works and the outcome.

The legitimate title of this document is a Draft Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada. We're talking not only about the Nevada Test Site, but some of the other locations in the state where we have conducted activities in the past and where we think we want to conduct some activities in the future. This Environmental Impact Statement is unlike other impact statements that you may be familiar with. It is not a project specific document. We're not talking about a building or a facility we want to build. It is a site-wide EIS. It talks about the Nevada Test Site; some areas in the state of Nevada. It talks about them in terms of land use; how we plan for the future, how we define the resources that we're going to use, and how they will fit within the future of the Nevada Test Site.

There are two other documents that are going to be having public meetings this week; the Stockpile Storage and Disposition Document and the Useable Fissile Material Disposition Document. Their meetings are on Thursday and Friday. Those are programmatic documents. They contain information and

they will define, for the Department, the programmatic direction and decisions. Those decisions that they make may influence the Nevada Test Site. And to the extent that this is a site-wide document we're talking about tonight, those alternatives and those decisions will be addressed in our Record of Decision. One of the things I want to try and stay clear on tonight is we're talking about our EIS, we're not trying to collect comments on those other two documents. You'll have an opportunity later in the week, Thursday night and Friday morning, to do that at the Sands Exposition Center.

So what we want to talk about is how DOE proposes to continue managing the Nevada Test Site and its resources in a manner that meets stakeholder concerns in the interest of effected and interested individuals and agencies.

We began this process in August of '94. We issued a Notice of Intent at that time. There was a 90-day scoping period where we had scoping meetings. We collected comments and information about what the public, what the stakeholders thought we should be doing in this document, the kind of decisions we should be looking at. We issued a Draft Implementation Plan in February of 1995. DOE, unlike

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other federal agencies, issues an Implementation Plan to relate to the public how we have treated the comments during the scoping period. We took another step, because the public asked to see this Implementation Plan before it was finalized, to see if we did a good enough job in their view. We issued it in draft form and we issued the Final Implementation Plan in July. Since that time, we've been working on the EIS itself, collecting information and putting the document together. And we issued the Draft EIS in February of this year. It's that big pile of paper with the pretty purple cover on it.

We're now in the public comment period. We have a 90-day comment period. It ends on May 3rd. After the 3rd of May, we will address the comments. We'll revise the document. We'll define a preferred alternative, and we'll issue a Final EIS. We do have four public hearings, this is the fourth. We have three workshops scheduled in the rural communities in April. So we are in the process of collecting comments to help us finalize this document.

I mentioned the scoping meetings that we have. In that process, there were many issues and questions that people had about what we are doing, primarily related to the alternatives that we

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proposed. Initially, we proposed two alternatives; the no-action alternative, continued operations; and then kind of a fuzzy alternative that talked about expanded use and some other activities. The comments we received indicated that we weren't complete enough in that analysis, so we have four alternatives in this document; and I'll be talking about those in a minute. There was some questions about DOE policies; in terms of the NEPA process itself, the length of the comment period, whether we could look at a Draft Implementation Plan. So we addressed those comments by issuing the plan in draft.

There was questions also, from a policy point of view, about "why should we continue to conduct or be ready to conduct nuclear testing?" That's an issue that we've addressed in this document in the sense that it's not our decision to do that. It is a presidential directive that we maintain the Test Site for that capability. Transportation was an issue in the sense that people became aware before we started this EIS process about low-level waste and transport to the Nevada Test Site for disposal. We have a Transportation Study that has become part of this process in the EIS. There is an appendix that contains the Transportation Study that has had a lot

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of stakeholder input and involvement in terms of what it contains.

Health and safety was an issue for people. We have put together a Health Risk Study and Analysis. It's also part of an appendix. And we use the information in putting together the impact analysis in this document. Resource management was of interest to a lot of people. "How can we manage the resources on the Nevada Test Site keeping in mind the principles of Ecosystem Management, the holistic view of how you manage a complex set of resources and activities on the Nevada Test Site?" So we have a framework for a Resource Management Plan as part of this document as well.

And then there were a number of comments that we considered out of scope. When we started this process, we tried to be clear that this is not a document that addresses Yucca Mountain, the suitability of the repository location. That's a process and there will be an impact statement at the end of the Yucca Mountain Site Characterization activity. We did address, as we addressed the cumulative impacts, we did address the impacts of their Site Characterization activities within our EIS.

So I've talked about some of the

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issues that we had to deal with in this document. What does it look like, in general? There is a Summary. It's a fairly skinny little document that contains the essence of the rest of the document. Volume I contains nine chapters and a bunch of appendices. Volume II is the framework for the Resource Management Plan. And Volume III will be issued with the Final EIS and will contain the comments and how we addressed the comments.

I mentioned a number of chapters in this EIS. If you look at that list, it's a fairly standard list of information the way EISs are put together. There are a couple unique features of this. One is Chapter 4 which talks about affected environments. I mentioned earlier that we're talking about not just the Nevada Test Site, but several places in the state of Nevada where we have done and will propose to continue doing activities. The Nevada Test Site and Tonopah Test Range is addressed in this document. There are two areas on the Nellis Air Force Range where we have conducted activities in the past. And we're going to have to do some remediation activities. The Central Nevada test area and the Shoal area are places we have, in the past, conducted underground nuclear tests.

One of the things we talk about in this document are Solar Enterprise Zones. We're proposing -- we've analyzed three sites in Southern Nevada and a site on the Test Site, the talks about the potential for placement of solar power production facilities. And in terms of the complexity of this document, if we talk about eight environmental settings, that is a piece of why this document is so big.

Chapter 8 talks about consultation and coordination. We have cooperating agencies with the Fish and Wildlife Service, with Bureau and Land Management, Defense Nuclear Agency, and the Air Force. We've taken the additional step of adding Nye County as a cooperating agency. It's not something that is usually done by the Department. But Nye County is a site of the location of the Nevada Test Site and they have information that has been useful to us in putting this document together.

Chapter 9 talks about preparers and contributors. There's a long list of people that helped write this document. One of the unique contributors to the document has been the Native Americans. We have a Native American Writing Group that was created out of the coordinated group we have

with 17 Native American tribes. They've actually written an appendix to the document. We've taken information from their appendix as their cultural view of some of the alternatives and information we have in our EIS. So you can see the contrasting views based on their culture and their religion.

I mentioned the appendices to the document. That again, is a fairly standard list of appendices except for two of them. We have two project specific appendices that talk about research facilities that we have on the Nevada Test Site. Appendix F talks about the big explosive experimental facility. That's Lawrence Livermore's facility where they can do explosive testing. Appendix J is a classified appendix, the Los Alamos National Laboratory's Lynar facility. It's classified in the sense that the activities we talk about are classified. We've taken the information, the environmental impact assessment out of that appendix and included it in Chapter 5, so you can see what we're talking about from that point of view.

I mentioned that we have four alternatives. The first alternative is continued current operations, the no-action alternative in the EIS sense. We have a second alternative where we talk

about discontinue operations; essentially closing the gates at the Nevada Test Site, maintaining security, and doing some environmental monitoring to make sure it stays the way we leave it. We've analyzed the impacts of doing that. Alternative 3 is the expanded-use alternative where we've tried to look at and collect information about everything that people can think about using the Test Site for in the sense of it being a national resource. We've analyzed those activities and the impacts and talk about them in the document. Alternative 4 is an alternate use of withdrawn land. We had -- during the scoping period, people asked why we couldn't return some of the land to the public domain. So we've analyzed activities and things that we could do on the Nevada Test Site, either returning some land to BLM, or do some educational, other kinds of research activities that have not been done in the past. I want to point out, and the note on this viewgraph says, "When we issue the Final EIS, we will identify a preferred alternative." That preferred alternative may not be any one of those alternatives but it may represent pieces or activities out of each one of them. So we will create an alternative that represents what we think is the best use of the resources that we have.

In addition to the eight environmental settings we talk about, we have five program areas that bring money and research and activities to the Test Site. So we've analyzed and put information in this document within those five categories. The defense program, the underground nuclear testing, the stockpile stewardship and management activities is a category of activities we analyzed. Waste management, disposal of both low-level waste that we generate on the Nevada Test Site from our own operations, as well as disposal of low-level waste from a number of DOE generators across the country, we've analyzed that category of activities. Environmental restoration is a category activity that is devoted to cleaning up past contamination or removing industrial sites that we no longer use. Non-defense research and development is a category of activities. For example, the Spill Test Facility is used to test hazardous chemicals, either spills and how you clean them up. And it is a non-defense research and development activity. Environmental technology development is another category that's in this one. And people have talked about, or proposed, using the Test Site as a place to launch commercial rockets for putting satellites into

orbit. That is a kind of activity that we can talk about in that area. Work for others is primarily a defense-related category of work where defense agencies need a secure, large remote location for doing some training activities. Those kinds of activities are in there. And if you look at those five program areas, you need to have an infrastructure that would support whatever it is that's being done. So in addition, we've analyzed site support activities, maintenance of power of roads and water, and facilities for people to conduct their activities.

I talked about the eight environmental settings, the five program areas. There are 13 resource elements that we also analyzed in terms of the impacts of those activities or those programs on the resources that we have to deal with. The land use, transportation, geology in soils, cultural resources, each one of these are analyzed across the four alternatives and the eight environmental settings, and the five programs. So if you've listened to me talk about the way this document is put together, it ends up being a very complex document. You are able to take an activity in an alternative, in an environmental setting by resource and look at what that activity is, what it represents

in terms of a potential environmental impact. When people ask me what part of this document to read, my answer is, if you can read the summary and understand its content pretty well, then you don't need to read the rest of it unless you're very interested in a lot of detail.

Let me talk for a minute about some of the issues that we have analyzed in this document and have influenced its content on how it's put together. As I mentioned, waste management is a big issue. We looked at environmental restoration waste. We've looked at defense surplus material waste as a category. And we've analyzed the impacts of disposal of those materials on the Test Site. If people would look at the Waste Management Programmatic EIS and some other documents, you may see differences in numbers that exist between the two documents. And primarily, they're differences in time frames and waste content that were analyzed in the two documents. And we believe our document has the best information possible to gather at the present time.

The state of Nevada filed a lawsuit some time ago and they have information needs that need to address that lawsuit. There is information in this document that will go a long ways

to answering some of the questions that the state has raised. Consistency has been a problem because -- or an issue or a challenge -- in the sense that as DOE makes decisions about future activities, they create programmatic EISs. They create different alternatives that influence what may happen at the Nevada Test Site in the future. The Stockpile Document and the Material Disposition Document came into town this week. Those two documents have influenced how we deal with what we've put in our EIS. We believe we've looked at, in the best way we can, as much information as we can put in a document. And we think we are as current as these documents can be.

The transportation risk was a problem. People had a lot of questions about how you will assess transportation risk. One of the things they were uncomfortable with was just using a computer module where you put information in and you get information out without knowing what it was or what happened to the information. So we've created what is a RAD/TRAN (ph) like model. RAD/TRAN is a classic computer model. We've opened up the process so people can look at the content of the analytical work to see what happened and how those assumptions got handled in the model itself. The transportation risk, as it is

in the document now, focuses largely on low-level waste shipments. It contains a lot of information. It addresses the maximum case that we can identify in the sense that one of the alternatives DOE is considering for the Test Site is a receipt of all the low-level waste generated by DOE. That analysis is in this document as well.

Health risk is a question people have. We've analyzed routine operations. We've looked at the maximum reasonably foreseeable accident that we could picture on the Test Site. We've analyzed that. And we've done a groundwater model and a groundwater assessment in terms of we know there's a lot of radioactivity in the groundwater. What happens to that into the future? We conduct a lot of monitoring around and on the Nevada Test Site and we have not identified radioactivity in the off-site environment. And we make the statement in this document that we don't believe we'll see radioactivity off the Nevada Test Site or the Nellis Air Force Range at all.

People have questions about underground nuclear testing. President Clinton is trying to, or is very interested in negotiating and achieving a comprehensive Test Ban Treaty where we

don't do any underground testing. So trying to be consistent with his objective, we've created two scenarios for this document. The first is a no-testing scenario where we just maintain the capability to do that. The second scenario is, if the President directs for whatever national security reason that we do a test, we have analyzed the conduct of an underground nuclear test, we've identified the impacts. And that information is also in the document. And then the Secretary some time ago identified the fact that we're going to conduct subcritical zero-yield tests. She issued a press release to that effect. Those tests are also analyzed in this document. I mentioned the classified appendix and the environmental impact information that's contained in Chapter 5.

One of the things we've tried to do in this document, is in chapter 4, lay out the environmental baseline. What is the baseline for environmental impacts on the Nevada Test Site today? And we've tried to present information in a way that people can look at historic activities in the context of an environmental baseline and what we have today. We know we've conducted atmospheric tests. There is some residual radioactivity on the Test Site. We've

done safety tests where we've conducted tests on the surface. There is some residual radioactivity remaining from those activities. We've done shallow borehole tests. When we did the plowshare (ph) activities, we produced SEDAN crater and a couple of other craters like that. And we've done low-level waste disposal activities on the Test Site in several different ways. We have shallow trench disposals where we've excavated a trench and we put material in it and cover it up. We've done shallow boreholes where more highly radioactive material needs better containment, so we have that kind of activity. And when we conduct an underground nuclear test and it creates a crater, we've used some of those craters for disposal of low-level waste as well. And then, of course, we've conducted underground nuclear tests. We've done that above the groundwater. We've done it below the groundwater. In a number of cases, we've conducted tests in the groundwater. So we've created information in this document that summarizes the quantity of radioactivity that remains within about 300 feet of the groundwater, either above it or below it.

There are tables in this document that summarize those categories of tests, how close

they are to the surface, and the kind of radioactivity that remains. The framework we're trying to -- or the picture we're trying to build here, is that people are concerned about low-level waste disposal. There is a large volume of that material being disposed of. But in terms of the radioactive content, it does not compare to the remainder of the radioactivity that's in the ground from underground nuclear testing.

I've mentioned that we've put information in this EIS that talks about radioactivity in the groundwater. We've never before published information by identifying the isotopes, the radioactive material itself, and the quantity. We have declassified this information. It's in tables in the document. People can look at that information and analyze for themselves what it is or what it represents.

As you walk around and look at the displays that we have here, we've tried to create other ways to see data and information. This is a 3-D computer-generated picture of the Test Site, of Yucca Flat actually. And this kind of greenish thing is the surface of the groundwater as we understand it to look. This is the surface of the Test Site, the mountain ranges. And then the blue dots represent

underground tests that have been conducted above the groundwater. The red dots represent those tests conducted in or below it.

So we've put together all this information and we have a lot of words and a lot of data. What does it represent in terms of adverse impacts? Now, we summarized the results of these analyses by an alternative. We identify programs with unavoidable adverse effects. And we summarized the impacts in terms of what is going to be the impact into the future. Certainly, underground nuclear testing for each of the alternatives, the historic impact is something that's going to be there for a long time. And we've identified that and put information in the document about it. If we did conduct an underground nuclear test, which we have the analysis for both Alternative 1 and Alternative 3, that would be another addition to the impact. Training activities in the sense that they use large areas, there is a land disturbance and associated impacts related to that. That's a category of activities that happens under work for others.

In Alternative 2, the underground nuclear testing, the historic impact remains. Alternative 2, if you remember, is that one where we

close the Test Site. We don't do any cleanup of what we know needs to be cleaned up, so that the impact remains of those contaminated conditions would persist into the future.

Alternative 3. There are a lot of activities that we address in Alternative 3 and a lot of programs. Again, if we conduct an underground nuclear test, that would be a significant impact. The training activities, as we talked about in Alternative 1. When we talk about construction of a solar power facility at any of these Solar Enterprise Zone sites, we've identified the land disturbance and associated impacts would be significant in the sense that they require large areas of land. The land use would be modified and there probably would be visual impacts as well from the facilities that were constructed.

For Alternative 4, it does not include any defense-related activities, although it does include the Solar Enterprise Zone activities. And you end up in the same place with the impacts in terms of land disturbance and alteration of land use and visual resources.

We've also analyzed and summarized the cumulative impacts in this document. The

cumulative impacts not just of what we've, or the Department proposes to do, but the impacts of our activities in concert or in addition to those activities that are conducted in Southern Nevada or around our facilities. When you look at cumulative impacts from that point of view, the things we're proposing don't result in a significant contribution to the larger impacts, resulting from the expanding economy and growth in Southern Nevada.

So I've summarized in general what this document is, what it contains, and how it's built. What are the next steps for us in this process? We're going to collect your comments, we're going to look at them. We're going to modify the document. We're going to issue a Final EIS. It will include how we address your comments. Thirty days after that or some time longer than 30 days, we'll issue a Record of Decision. The Secretary will define what it is out of this document, define those activities that we are going to conduct on the Nevada Test Site. If those activities have an environmental impact and we can mitigate it, we'll issue a Mitigation Action Plan following a Record of Decision. That lays out a process that commits the Department to activities that will mitigate whatever impacts are

defined. I should point out, that at the same time that this document is finished, the Resource Management Plan will be an on-going process where the public can have an input into how we manage the Nevada Test Site and its resources in terms of Ecosystem Management and consistent use of resources and facilities.

And I started out this discussion by saying that we're very interested in public comments. And we've had four meetings, this is the fourth public meeting. We have 10 public reading rooms. The information in this document is in those reading rooms. We have opportunities for people to give us comments in a lot of ways. Not only do we have these four public meetings that we've already conducted, we've scheduled three workshops; one in Tonopah, one is Caliente, and one in Boulder City during the month of April, where we hope to collect additional comments and feedback on the content of the document.

I mentioned that we can receive comments in a lot of ways. We can get oral comments. We can get them tonight as you present your comments. We have an 800 number. We have a regular number. You can write your comments to me. You can FAX them to

us. We have an E-Mail address. If you want to do that electronically, you can get on the Internet and send us information. In the short term, we will have on the Nevada Home Page, the Summary Document, so people can look at it from a computer point of view and be able to give us input from that point of view.

This slide is a little old and out-of-date, but it shows you where we've been and when we were there. We're in Las Vegas tonight. The other meeting I mentioned Thursday and Friday of this week, the Disposition of Fissile Material EIS and the Stockpile Stewardship and Management documents, we will be presenting joint meetings where you can listen to them talk about their documents and talk about the alternatives that may or may not impact the Nevada Test Site.

And as I said at the beginning, the purpose of this document and the purpose of these meetings, is to help us put together the information that we need so we can continue to manage the Nevada Test Site and its resources in the manner that addresses your concerns and those of the affected and interested individuals and agencies.

And that's the information I have to tell you about what this document is. And the way

we've structured this process tonight, we have a few moments for some general questions about what I have said, then we're going to take a break for a few minutes. And then we're going to have an opportunity for people that want to give us comments, to come to the microphone and give us your name and then give us your comment. So I'm open for some simple questions. Give us your name, too, when you do that.

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PUBLIC HEARING TRANSCRIPT 1

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING

(Public Comments)

Held at the

DIXIE CENTER CONVENTION FACILITIES
425 South 700 East
St. George, Utah 84770

on

March 5, 1996
Beginning at
7:00 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

RECEIVED MAR 1 1 1996

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ST. GEORGE, UTAH, MARCH 5, 1996, 7:00 P.M.

PUBLIC COMMENT PERIOD

BARBARA HOLT PRENTWICH

PRENTWICH: I'm Barbara Prentwich. I'm here as a private citizen, but I'm also in a group in the Cedar City area that is concerned with -- we call ourselves Citizens for Safe Utah Roads. We're 1 concerned with impact of additional trucking on our roads through our community. And we are concerned 2 with specifically the proposed Antelex (ph) Mine Site that's going to bring a lot of additional trucks through our towns and down I-15. I think one of the 3 big concerns that we have is concern with transportation of any waste. And as you said, you're not talking about the high-level waste at this point. But as I've looked at these alternatives -- and we haven't had much of a chance to really look these over before tonight -- it appears to me that I would like 4 to speak in favor of a combination of Alternative 1 and Alternative 4. But going through the impacts of these, I think that I would like to state that I think it's really important that we don't do any activities

5 there that will generate more of the kinds of nuclear waste problems that we've already got.

Now, I recognize the fact that presidential decisions could impact what would take place there. But I think that short of an extremely serious, and hopefully never to come about national security situation, I think that we should be really 6 careful that we don't do anything there that generates more waste of the kind that we've had problems with. And I have some concerns with specifically on Alternative 3: Approximately 930,000 cubic meters of low-level waste and 250,000 cubic meters of mixed 7 waste would be generated on and off the site in a ten-year period. This is a technical document and I'm not clear where that's coming from. But that concerns me a lot. I'd like to know where it's coming from, and why we have to have it, and is there any way to avoid it?

I'm also concerned with Alternative 4's impacts in geology and soils where it says soil contamination and an increase in erosion 8 potential. And particularly, the soil contamination, what kind of activities are we going to do that does soil contamination? In other words, this environment has already been beat to pieces. I think that

whatever we do that takes place there must consider the fact that we've got to stop destroying the earth and we've got to stop destroying that place, specifically. It's a little hard to decide if we think that Alternative 3 or 4 would be good in terms of this solar development you described, because we haven't heard enough specifics about what it really is, so how can we speak in favor or against it? But I think we have to be really careful of that big picture, that we don't cause ourselves more problems; and especially if we have -- if this study has any impact on future decisions about high-level nuclear waste being brought through this area or brought near there, I plead and I hope that we can do something to stop that from happening.

Thank you.

ELLE: We can talk about some of your comments or questions later. And I guess I -- at some level, I'm uncomfortable just hearing a comment without responding, but I'd rather just collect the comments and then we'll figure out what to do next.

Scott Priebrey.

SCOTT PRIEBREY

PRIEBREY: My main concern is the transportation end of the waste products through our Southern Utah area and through the Northern parts of Nevada. And I know that they're working on something to seal the material in a type of a cask that is indestructible but probably would solve the problem. But what you see with our train accidents continually happening and truck accidents, but the trains -- all those trains have been burning now. And I hope that whatever they're providing to cause -- to take care of the problem needs to be really a good product.

Thank you.

ELLE: Appreciate your comment. Dave Timothy.

DAVE TIMOTHY

TIMOTHY: I have had extensive experience with the Department of Energy's Testing Program and how they work. I believe that I'm as qualified as anybody to have a concern about what happened. One of my interests with the DOE is, you started these tests in the '50s. Don't you think that it would be fair to

finish the first test that you started? You were not very concerned about the effects on people. And I'm kind of concerned that you may be more concerned about the turtles and their habitat than what us people had before. We were drafted, in effect, into the Military's Testing Program; many of us as children, without our knowledge or consent. We have, many of us, yet to even be acknowledged as being victims of this testing program.

I grew up in an area out in Northeastern Utah, a place called Alta. Dr. Robert Pendleton (ph) had three monitors set up within three miles of my dad's dairy. Those were consistently the three hottest monitors in the state. The amounts that those monitors were reading was absolutely unbelievable. While this was being done, the Department of Energy was telling people, "This is safe. This won't hurt you. No reason to be concerned or worried." And yet, after a ten-year incubation period, I have thyroid cancer. I lost my thyroid, parathyroid. I lost most of my lymph nodes. I lost all of my muscles from here to here: (Indicating) many, many operations; many, many thousands and thousands of dollars of surgical bills. I have been disabled. The government refuses to even acknowledge

that I might have been damaged. What about disability? What about compensation along with finishing tests? And we have a lot of doctors, physicists, Ph.Ds that can tell us what's going to go on and what's going to happen. We have government officials that's been telling us, "This won't bother you. This won't hurt you. Here's what we're going to do." And then years later, we find out that isn't what was done, and it did hurt us, and it did damage us. And it damaged the land. It had a lot of effect on a lot of people. Now, we're here to do a new program when the old one isn't even finished. Don't you think it would be fair to finish some of the old things first?

ELLE: Well, to the extent that I can answer that question, I think we have tried to define what the existing baseline is. I don't answer your question about finishing tests that were done in the past.

TIMOTHY: I'm concerned about these imaginary fences the fallout doesn't go over, and that contamination can't escape from. We live in an area where there's winds. We have a lot of things. How many people do you think are aware that each of those underground tests had a great big huge vent to it;

and when they set these blasts off, this radioactive fallout is belched out on the ground to be blown any way the wind blows? Are you aware that this is how the underground -- the safe testing was done?

ELLE: We have tried to summarize in this document the results or the consequences of past tests.

TIMOTHY: Okay. I believe that there should be no further testing of any type relating to nuclear at that Test Site. I believe that that Test Site should be permanently closed as to any military nuclear-type testing. Okay? I believe that it should be returned back to the people whom it was given to. That is sacred grounds for the Indians that was taken from them. Part of that is their sacred burial grounds. I think that there's been a lot of injustice done. I think that this should be returned back. We don't need a disposal facility like up in Northern Utah where the gases or the biological can escape. We don't need any further damage to us or this country. I believe that this should be returned back to public use as much as safe to be. And I am absolutely, totally against any storage or disbandment or supposedly elimination of future problems there.

Thank you.

ELLE: The next person was Paul Nevan.

PAUL NEVAN

NEVAN: My name is Paul Nevan from St. George, Utah. My subject is addressed mainly to the transportation of the heavily impacted area that we live. And to be concise and brief, I'd just like to read this statement which I'll then submit to you. "A safe highway route around St. George, Utah, for nuclear waste shipments on Interstate 66 and it could even be Antelee (ph) type of heavy truck traffic. The attached map of the USA shows the proposed interstate highway routes for shipping nuclear waste to the Southern Nevada proposed nuclear waste repository as printed in the Salt Lake Tribune. More than one-half of all North American nuclear waste is to be shipped through the center of Cedar City and St. George, Utah. Interstate 15 is overcrowded in these cities and there is a high rate of heavy-truck and semi-truck wrecks, especially in the Virgin River gorge portion of Interstate 15. The state of Nevada and Las Vegas City is planning to build railroad systems to divert the rail shipments of nuclear waste completely around the north of the Las Vegas region to diminish the

possibility of shipping incidents. Their proposed highway shipments of nuclear waste can be completely diverted around St. George City, Washington County, and Southern Utah on the newly proposed Interstate 66 and Southern Corridor Highway and delivered to the Nevada Test Site on Interstate 66 and completely avoiding the Las Vegas Metropolitan region. Interstate 66 is the proposed 21st Century, six-lane, high-speed freeway to cross the Transcontinental United States from coast-to-coast and not to cross or enter any metropolitan areas. This new Interstate 66 will be built on the spine concept with traffic connecting to the mainline of the freeway with connector freeways from the metropolitan areas.

The most physically challenging and critical section of the Interstate 66 is between the Virgin River gorge of I-15 and St. George, Utah and Page, Arizona. If this section is built first, then the nuclear waste shipments would be routed around St. George to the south and avoid the St. George City area altogether. If the nuclear depository (sic) is created in Southern Nevada, then the highway to transport the waste through Washington County should be built first.

Our -- my main position is of the

very attractive life-style that the mountain states and especially southern Utah offers to people. I believe with good planning and execution, we can preserve that a-way-of-life and still accommodate the necessary activities of modern civilization.

Thank you.

ELLE: Thanks. The next person is Phil Peterson.

PHIL PETERSON

PETERSON: My main concerns are, as I listen to you tonight, I hear much of what I read that went on in the past; that being that decisions have somewhat already been made. I find it interesting of your comment in regards to best judgment. I find it interesting in your comment that, number two, closing the Test Site is basically a nonalternative. I think also that is somewhat of a misstated alternative in the fact that what many of the comments were in the prior meetings here was to close the Test Site and to clean it up. Your Number 3 is talking about closing it, leaving as is. I don't think that was the alternative that we presented at that time.

I, like the other gentleman, find

it quite interesting that there is still in Alternative #1, a nonrecognition of the factor that the underground testing is still a risk to the people here, not just the turtles. I find it interesting that your only other al -- bad scenario is turtles. I also an offended by the recognition -- or nonrecognition of the government to the legitimate rights of the Native Americans of that area. As to the fact that ground was stolen from them for that, and now your comment's being that even though they have made items within your EIS, you don't know how you're going to reconcile them; which to me says we're not. Those Native Indians have been totally ignored, and I see in the comments that are made tonight, they still will be.

Thank you.

ELLE: Thank you. Laurie Wilkinson. Richard Cuthrell.

RICHARD CUTHRELL

CUTHRELL: First of all, may I ask a couple of questions? Where are you from, sir?

ELLE: Las Vegas.

CUTHRELL: Las Vegas. You live in Las

Vegas?

ELLE: Yes.

CUTHRELL: Well, that would be all right if we could keep the thing in Las Vegas, but unfortunately, it has spilled over here. Have you ever been in an atomic bomb blast?

ELLE: No.

CUTHRELL: I have. You ought to try it some time. I'll tell you, I find it most objectionable. In fact, I find the whole Department of Energy objectionable in the things that they have done in the past. People are -- there's graveyards full of people that they have -- I'm sorry, this makes me a little nervous. But there's graveyards full of people; that for no reason at all, other than the fact that they happen to be out at the time, that they were not warned that those tests were going to occur, are there. In Nuremberg, the Nazis were tried and for war crimes. And yet, you have genocide here and all throughout the United States and elsewhere. I was -- my -- I happen to be on a ship at the time out in the South Pacific.

Now, you're wanting to -- I understand you're wanting to transport this radiation through this area. My proposal is, sir, that you

downsize the whole Department of Energy and turn it to oblivion. And I'm trying to hold back my disgust, sir.

ELLE: Thank you. Lloyd Cannon.

LLOYD CANNON

CANNON: I'm Lloyd Cannon. I was born and raised here in Southern Utah. I was a young man when I come back from the Korean War. I took up the job of driving CAT (ph). And there's a lot of guys going around with the Geiger counters and hot spots, and mine was right in the middle of the radiation from where the bombs set off. And we one time was working out above Pioche, Nevada, and there was eight of us at one time; and they set a bomb off 11 o'clock in the morning and the sun was so bright. And there were only three of us left from out there. My son was born with a decayed hip. Bone was decaying but he's doing fine now. And the woman who was out there, she was pregnant when this bomb went off. I'm telling you, it's hard to see this little child, she's still -- this has been -- this was in '55 and the baby is still growing. It's deformed and it makes your heart ache to see what this has done.

Another brother out there with us, he lost a child. His wife was pregnant and was born. I buried my youngest brother from radiation, from lung cancer. And I buried my wife in '85 of cancer. From driving CAT. I've got burns here on my neck to prove it. And I've got a spot here that has been checked by the Mayo Clinic in University of Utah. There's a lump there, and once in a while it gets so bad that I can't touch my face. They can't do nothin' about it and won't let them. So it's a sad situation when you see what we have, this radiation and stuff we're kind of throwing on to people here in the Southern part of Utah. Like I say, there -- they say there's a distinction of the turtle stuff, I guess the bomb stuff killed more turtles than -- our animals and stuff rather than anything else.

And also, we had a farm down where the Bloomington is that was called Price Banks (ph), we had a dairy here down there. And we'd get up in the morning and watch this cloud of dust come in. And I've seen the cattle that we've had literally out in the pasture, their hair has been eaten and come up clear up to their knees from radiation stuff. And they've told us not to ship the milk, to dump the milk for a month and stuff. This is what we had to contend

with. If they had come out and told us the truth, it would have been okay, but they'd never tell us this. And a lot of us would come out, and we thought it was great to get up early in the morning to see the big flash. It's heart-breaking to see friends that we've lost here in the Southern part of Utah.

Thank you.

ELLE: The last one I have is Claudia Peterson.

(NO COMMENT FROM CLAUDIA PETERSON)

ELLE: Well, does anyone else want to make a final comment?

LLOYD LEAVITT

LEAVITT: I wasn't here for your introduction. My name is Lloyd Leavitt. I'm a native here of St. George. I haven't been here too many years, retired, but I have been out in Nevada for 40 years working in a large ammunition depo north of Hugh (ph) at the Hawthorne (ph) for 40 years. And I think I did the first experimental bombing with live bombs to test to see what effects that would have on the dam, Boulder Dam at that time; two years prior to it before they started the actual testing.

But anyway, my main purpose here or my thoughts are, I have made many trips to the Nevada Test Site. I have been down in the mine. I've been down in the tunnels. I've seen where they've made the blasts. I have seen the subsident craters and the other blasts and the contaminated areas. And I realize this is a highly controversial and emotional thing that we're dealing with here at this time. However, my personal opinion, and I realize and I think that many injustices possibly may have taken place earlier. I knew of Darnaley, your Director, a few years ago. And he said to me one time, he said, "If we knew what we know now, we wouldn't have done the things that we did early in the program, that we learned from from our mistakes." Rather than going on too long with this, my point is this: This is 1996. Whatever damage that has been done, has been done. And for many people, it's very sad. However, I think we should pick up and stand up and realize where we are today. In other words, what I've been hearing, and I came in late, all I've heard was, you know, the past and all the bad things we've done. But what are we going to do in the future? This is the thing I think we have to look at. We all know -- we pretty well know what the history is of the past. And we

know all the allocations and the things that have been said. So what can we do March 5th, whatever, 1996, from this point on? We've already had our problems, now what can we do to solve them? And I think this needs to be examined as to find out what contamination we do have left on the site, what might be returned maybe to the States or other areas. 26

But my -- now this is -- and I understand you're going to take up a different issue -- that you didn't want to take up the storage issue tonight, that's a separate issue. But I'd like to just express an opinion concerning that, if I might. Inasmuch as the government already has a -- owns the so-called -- has the property now, it's already been contamination. It's already contaminated. And there's many acres that will probably never be of any use to anybody of any great significance as far as recreation and things of this nature. So inasmuch as you already have it, inasmuch as it's already isolated, inasmuch as it's in the capacity that it is, I think it would be ideal, in my opinion, for a storage area. And I have several reasons for saying that. I've seen the studies, the geological studies that you've made there, which I don't suppose there's any across of ground that have 27

had more intensive geological studies than what the Department of DoD has put out in that area. And the water table is so low and moves so slow, that it's worse contamination from anything from a storage area. I don't see where this would be a problem, because the lack of rain fall and the surface water would never get to a point where it would get beyond the valid. From that standpoint. And also, it's isolated. It's one of the most isolated points in the United States. And in that condition, inasmuch as we're putting this waste into the swimming pools and keep building them bigger and bigger and bigger at every energy station that we have throughout the United States, it's getting almost impossible. We've got to do something soon to do something with this material. And I think that would be a good place to deposit it and put it in there. I realize, politically, that you're going to get hit from every side.

I've also seen some of your experiments concerning transportation. I hear a lot of words about transportation and the hazards in transportation. I -- all I've seen is what you people have shown me, so all I have seen is trains being rushed into a solid wall with tanks and the trucks;

radio controls going at 70 miles-an-hour, hitting a solid rock wall with these containers. And from the evidence that you showed me, and of course, that's the only evidence we have, that it hasn't been done by, as far as I know, from an outside agency. It may have been done, I don't know, but I haven't seen that. So the only evidence I have seen, it shows that it would be safe with transportation. Now, you go to great extents in moving this material through the area; however, I think a lot of suggestions here were wise. I think there are some routes through Nevada that has concerned many people, that it could be routed down through Pioche or Ely or something down in that area, where it could come down from the north and enter the area without going through any great metropolitan area. I think there are routes throughout the United States that that could be achieved.

I guess basically that's all I have to say. I'm taking a group down this weekend. I'm taking a history class here. We just got through studying this in quite detail. This will include both college students and adults, who have experienced the bomb during that bombing period, and the young people who are going to school now just learning it from

ordering the text books. So from that standpoint, I think they'll find it very interesting this weekend.

ELLE: Any other formal comments people want to make?

(NO OTHER COMMENTS WERE ADDRESSED)

ELLE: Well, unless my staff decides to object, I think we can entertain some more questions, if we want to do that.

(QUESTION AND ANSWER PERIOD - OFF THE RECORD)

(PUBLIC COMMENT PERIOD - BACK ON THE RECORD)

BARBARA HOLT PRESTWICH

PRESTWICH: I really believe that the idea of bringing even the low-level waste across our highways, and bringing more and more contamination to 28 that area, is unconscionable. And I want to add that to my comments about that. It is absolutely unacceptable.

ELLE: We'll do that.

LOUIS STEVENSON

STEVENSON: This is the first time I have had the opportunity to be present in an open meeting

such as this, and I find it very disconforting to hear the stories that some of the people have related. I, for one, if I could vote on it, I would vote to shut the unit down. And I think that in the prospect of life that should go on, when we begin jeopardizing it 29 with elements that we really don't know the fullest extent of, and haven't known for the last 45 years, I think it would be better off to be left alone. Thank you.

ELLE: Thank you.

(QUESTION AND ANSWER PERIOD - OFF THE RECORD)

ELLE: We'd be happy to stay around and answer individual questions, we're committed to do that. And if there are no other questions people want to ask, I thank you very much for being here. And we will address your comments in the process of putting together the final EIS on the Nevada Test Site. Thank you very much.

(FORMAL MEETING ADJOURNED AT 8:00 P.M.)

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PUBLIC HEARING TRANSCRIPT 2

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

(QUESTION AND ANSWER PERIOD)
and
(PUBLIC COMMENTS)

Held at the

BOB RUUD COMMUNITY CENTER
Pahrump, Nevada

on

March 13, 1996
Beginning at
6:40 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

KEY to transcript symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "Verbatim -- in the exact words; word for word."

Dash: - -- | Indicates a sentence not completed by speaker.

Dots: [...] Indicates something was said by the speaker, which, as spoken, is neither audible nor decipherable to the reporter or from the taped cassette recording.

(ph) Indicates phonetic.

(sic) Represents exactly as said by the speaker and is used to alert the speaker/reader to an error in the record.

Parentheses: ( ) Words within parentheses are reporter's explanatory comments.

VOICE: Indicates an unknown speaker.

Uh-huh: Indicates affirmative answer.

Huh-uh: Indicates negative answer.

ENVIRONMENTAL IMPACT STATEMENT

MEETING AGENDA

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PAHRUMP NEVADA, MARCH 19, 1996, 6:40 P.M.

QUESTION AND ANSWER PERIOD

SALLY DEVLIN

DEVLIN: My name is Sally Devlin. And I'd like very much if you'd put the map, the one corresponding to that, up again. I want everybody in the room to take a good look at that, because if you'll notice, Pahrump is not on it. And this is what I'm going to speak about, because three of your plans on the NTS EIS are on bringing the waste through Pahrump. And you have, and I say it over and over again, that you do not tell the public that all of this is in Nye County, Nevada. So I am reprimanding you.

The other one is, I want the ones with the numbers of the radiation risk. Dr. Ells knows that they've taught me, all these years, how to read these numbers. And I am referring to Number Plutonium 241 on Dakota Mesa. And you see that 9.00 times 10 to the 4. That means you're dead. When you see numbers like 1 to the 10, that's not so bad; but the 7 to the 16, And so on. My friend, Dr. Chesnut

from Livermore, who did the wonderful mathematics on bringing up the oil from Texas, taught me how to read these things. And I read 14 books on them And memb these numbers a hundred times. So for those of you that don't understand these numbers, just you see 8, 9; and if you never see, because you're already dead. Remember what they mean, the lower the number, the safer. And most people don't know it. I just gave a friend my periodic table and found out there are three more elements added to it. I just had 103 and now there are 106. Quit it, guys.

ELLE: One of the things I tried to say, is that those are big numbers. There is a lot of radioactivity in the subsurface environment. One of the things that we've tried to characterize in this document, is that it's going to stay there. It's not accessible to people. And the groundwater transport processes that we think we understand would indicate that it's going to stay there. We monitor the groundwater around the Test Site, around the Nellis Air Force Range, we have never seen any radioactivity connected with activities on the Test Site. And we've tried to make the statement in this document in a way that people can understand it, that we expect it to stay that way.

DEVLIN: We'll get into monitoring later.

ELLE: Okay. I also do want to say that Nye County is a cooperating agency, so to the extent that that is a unique step for the Department, we do recognize Nye County's role both historically and today in the future of the Nevada Test Site. And we're very interested in making sure that the residents and the people in Nye County are aware of what we're doing. That's why we're here.

GRANT HUDLOW

HUDLOW: I got a kick out of using the term groundwater transport. I'm a chemical engineer. I'm Grant Hudlow. And the transport mechanism for radionuclides has only been known for the last 12 years. And the discovery was made by a Canadian. I read his paper two years ago and it took me 30 minutes to figure out what he was saying at all. Those of us that are in chemistry seem to have a problem with that sort of thing. The transport mechanism is colloids. And we had an example of it at Cochiti Lake several years ago where Los Alamos buried some radioactivity to see what it would do. And the next time they saw it, it was in the fish on Cochiti

Lake and very, very quickly. It may be true the tritium won't get off of the Test Site because of its short half-life, but everything else will. The Yucca Mountain studies, they finally admitted that it would take about 1,000 years to get all that stuff off the Test Site. And that was before they found the ponds. That assumed a dry mountain. When they found the ponds, they shut the operation down and didn't complete the analysis. So I don't know what their opinion is on that now. But the monitoring is critical because all that stuff is going into our groundwater, and it may take 1,000 years, as they 2 said, or it may be somewhat less than that.

ELLE: Well, I agree the monitoring is critical and it is one of the activities that we'll continue into the future.

PUBLIC COMMENTS

FRED DEXTER

DEXTER: My name is Fred Dexter. My concern is with the employment opportunities at the Nevada Test Site proper. And I speak of the Nevada Test Site proper to separate it from the three other

areas which are being mentioned for the Solar Power Plant. I don't know if employment is generally part of an Environmental Impact Statement, but it is in this one, so that's why I'm bringing up the question. It seems to me that Las Vegas right now is having a mega job explosion, probably doesn't need anymore jobs. I would include, in Las Vegas, the Eldorado Valley near Boulder City. I think that jobs should be 3 directed into Nye County, that's where the real Test Site is. It's not some place out by Boulder City. I don't know why those three other areas -- I think one 4 of is Coyote Springs and some other place -- were even mentioned in this. That's a question which I have about the process.

And I think the Test Site is what everyone is really concerned about. You put a solar plant at the Test Site, you generate power. The Test Site can use the power. You don't need to export the power, I would not think. That's going to be one step in putting a nonnuclear industry out there and creating what I would consider to be more clean industry. And the more clean industry that's out there, I think will be the greater the imperative to have a good and thorough remediation of the entire site. I think I've read, it's about the same size as

the state of Rhode Island. I also think that cleaning up of the site itself is an industry. Maybe there's going to be 16,000 jobs generated in Las Vegas by a few casinos. If you generated 1,600 jobs, which I don't think is improbable; that's just a guess, hiring 5 people to clean up that site, I think that would benefit Nye County and Pahrump. And I don't think Las Vegas needs any more jobs.

Thank you.

ELLE: Appreciate your comment. But you were right at the beginning of your comment, that we have analyzed the economic conditions based on those four alternatives and the workers, the kinds of workload that would be there for people to look at. That information is in there.

SALLY DEVLIN

DEVLIN: Thank you very much, Dr. Elle and everybody for coming down to Pahrump. I'm sorry that some of our politicians aren't here to greet you. And we have some other friends from Amargosa here who are interested. And we want to welcome you, and be happy that it didn't snow over the pass, because it was closed last night.

My name is Sally Devlin. And I just want to answer this gentleman. They had the maximum 9,200 employed at the Test Site, and it is down to 1,600 now, and it will go down lower. Except, that my friends that work out there are working six days a week, ten-hour shifts, so something is going on. And I think it's interesting for you to know that. I don't know what they're doing. As far as the 6 solar goes, I hope they do some solar out there. But that's the numbers. And Dr. Burns was at the NWTR meeting and he said they're going to fire another 400. So who knows what's going on.

My name is Sally Devlin and I live in Pahrump, Nevada. My home is 30 miles from the Test Site and 50 miles from Yucca Mountain. Both are located totally in Nye County, Nevada. The federal government owns approximately 93 percent of Nye County. And we are the third largest county in the United States. It's not in my report, but the Feds own 87 percent of the state of Nevada. Years ago, when I became interested in the transportation studies, it was because there was a planned railroad to come through Pahrump.

On Page S-2 of the Draft EIS on NTS and off-site locations in the state of Nevada, is

a map of the state and the NTS. Deleted is Highway 160, which goes from Las Vegas, Clark County; through Pahrump, Nye county. This highway parallels Highway 95, which goes from Clark County, Nye County where NTS is located. Somehow, in this Draft EIS, Volume 1, Appendix 1, Transportation Study, on Pages 3-18, 3-20, and 3-22, are maps using Highway 160 to transport waste. These routes are mapped on Page 3-25. The risks are on NV-5, NV-7, and NV-9, and others. Coming over from I-15 to 160, Clark County, is two lanes. Over the pass at Mountain Springs, which is approximately 5,500 feet and alternates three lanes for a distance. Another 40 miles, 16 of which are in Nye County, are all two lanes, except for 16 miles through the center of town; which will be short-lane once construction is completed. Another 40 miles on 160 is two lanes, and then the highway connects with 95, which has four lanes to the NTS. The 90 or so miles on 160 has no auxiliary roads. We have a few paid firemen and our 55-member volunteer group. We desperately need FEMA funds to train and 7 equip our firemen. Las Vegas recently had 70 to 75 trained in Maryland for a week. We were totally ignored.

Liquid nitrogen, as well as liquid

cyanide, propane, gasoline, and other hazardous materials travel this congested Road 160 at all times. I gave a worst case scenario on a spill at Indian Springs Prison. That's on 95 with the 8 hazardous waste spill. Listen to the tape and read the transcript from the NWTRB Sociological Meeting last spring. It could be a real prophetic tragedy. Under Alternate 3, Page 3-32 of the summary, is at 90,000 cubic meters of LLW and LLMW, would be stored at the Test Site. The Transportation Study on 2-14 states that it will be one million, a hundred and fifty-four, nine sixty-three cubic yards of the waste. And it would come through with a potential; and these are your numbers, 24 million, 264 thousand, 796 cubic yards over in the next 75 years. I didn't put in for five years, you do want to pay Nye County 38 million. That's a pittance.

On pages 3 through 30 through 40 of the Transportation EIS, there are bar graphs; NV-6 which parallel 160. Among the highest of every fatality risk from traffic fatalities to 9 radiation-induced cancer risks, and the highest on hazardous index risk. If an accident happened on 95, the only access would be on 160 through Pahrump.

NTS currently stores 1,500

55-gallon drums of NRW, of transuranic waste. That may or may not go to WIPP. If there is no WIPP, will 10 NTS get another 5,000-gallon drums of transuranic waste? From the recently declassified DoD report, the missing numbers are filled in to make up the 300 metric tons of high-level waste that might be stored at NTS. If Yucca Mountain and the secondary 11 repository total 60 billion are not built, would the extra 150 metric tons be stored at NTS? 150 at Yucca Mountain and 150 at NTS. There seem to be no viable 12 plans for railroads coming to the Test Site from three directions. The federal government seems to have absolutely no interest in our demographics. Our unincorporated town with no map of the boundaries, as 13 they have never been surveyed by a licensed surveyor with a stamp, is as large as five eastern states.

Our county commissioners have allocated 48,000 parcels ranging in size from single parcels to 100 acres. This means that our 20,000 people today could become the third most populated town in Nevada. We have one of the largest and purest aquifers in the whole nation. My questions are not only directed towards DOE and DoD and DOT, but -- and everybody knows I yell out every acronym at every meeting -- but to everyone in this country who

is interested in the plans for NTS. How can we take a stand against the government's total disregard for people, especially the people of Pahrump and Nye County, who will be impacted by these poisons? Take the expendable people of Hanford, Washington who have been living with 55 million gallons of highly radioactive waste currently stored in 177 underground tanks. And what would happen if the Plutonium and Uranium 235 were really to go critical, what would happen? This has been going on for 50 years and the characterization for 10. Clean-up would be 36 billion dollars. The government has allowed this mess to go on for almost 50 years. And I shudder what they have in mind for us in Nye County. Nationwide transport of this LLW, LLMV, TRW, HLW will destroy our pristine county, and what about the rest of the 43 states involved? We do not want what happened from a radioactive spill from Los Alamos that ended up at Cochiti Lake that polluted it with radioactive colloids. Why are there no colloidal studies being made when I have heard that there is a real need and that it is being ignored?

Why don't we go to new science and reprocess and reactivate -- and this will come up again at the ones on the 28th and 29th -- on-site

these dangerous elements? Nevada produces no radioactive waste; and yet, the federal government wants to put it all here. The government knows, as do all of us who have been studying radiobiology, that radiation can destroy our future generations. We must stop this nonsense for the preservation of the nation. As a stakeholder, and everybody that's here is a stakeholder, should know this, we/I have absolutely no say about any of this. Information must get to all the people of this nation and the world about how dangerous these plans are. Please, Mr. President, stop it. And thank you for your time.

GRANT HUDLOW

HUDLOW: I'm Grant Hudlow, also from Pahrump. I'm the CEO of Allied Science, Incorporated. What we do, is we clean up environmental messes and we try to prevent environmental messes. So far, our work has been in the biomass; trash, tires, that sort of thing. About 15 years ago, I got involved with Sandia in the reaction that can clean up the actinides, the long-lived radioactive waste. And as I mentioned a little while ago, I built a small one of these reactors in my backyard and the neighbors were not

amused. But it didn't go any place. The bureaucracy finally has admitted that these processes exist. They've also said that the government scientists cannot put them into production. And of course not, they are not designed to put things into production; scientists discover things. There are very few of us that know how to put things into production, and I'm one of those people.

The thing that I would like to suggest in your study, is that you shift your emphasis. There is no such thing anymore as waste disposal. It's an impossibility. The colloids that I mentioned earlier make that impossible to dispose of waste. We have to do something to react the waste, transform it in some way or another, so that it either becomes useful or it becomes benign; one or the other. So that makes the whole transportation issue that Sally was talking about really a moot question. Why would you transport something all over the country when you have to deactivate it, transform it, some way anyway; why would you take the risk to transport something like that all across the country?

Sally also mentioned Hanford, and we need to learn from what went on up there. I have a friend who came within a few minutes of getting killed

in the explosion up there. And I'm not sure that that explosion has been declassified yet, but it needs to be. The problem at Hanford came from violating two nuclear engineering rules that were developed by Rick Ovart. And, of course, when he was gone, why, his rules went with him. One of them is, that for the waste material, you absolutely do not dilute it, period. Hanford has God knows how much high-level radioactivity; plutonium, uranium, so forth, in 55 million gallons of water. That was a totally insane move. They're getting ready to build another one at SRS. And as I understand it, the secret pipeline that's being built out at the Test Site right now is to ship that material down here and so we'll have that nightmare on the Test Site. And in fact, it's mentioned as one of the alternatives in your report. So I just wanted to point out that that needs to be clarified that that kind of a thing should not exist at Hanford and it needs to be remediated and it does not need to be transported here.

The second rule that they violated up there is that you never put plutonium, uranium, those kinds of things in a critical mass, unless you want an explosion or a reaction. Now, they violated that rule up there too. So now they're forced to keep

pumping things from tank to tank to tank, which is extremely dangerous. Because if they ever allow it to settle out, it will go critical, go through the bottom of the tank and down into the earth. And that's the reason that they have that kind of a mess up there now. So we need to learn from what's gone on before and bring that stuff out in the open and set up systems so that we don't have to go through all of that again.

And one of the terms you used was current practices and best procedures. And the current practices have been covered up. And because of the Cold War, they were all classified and they could be hidden; whether they had anything to do with the military or not. And we need to open that up, and I applaud the little bit that's been opened up here so far.

The other facts that are missing in here, as I mentioned, Yucca Mountain. The studies at Yucca Mountain were quite a zoo for quite a while. And finally, there is some really important facts that came out about how stuff moves underground, even in solid rock, supposedly solid rock. And that all needs to be in your report in the form of facts and figures. Having, what is it, 300 million curies underground in

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the groundwater and everything else, and then stating that it's not going to move, you know, don't you have children, don't you have grandchildren? Don't you expect anybody to live within a few thousand miles of that place? You know, that kind of thing needs to be addressed. And I'm not criticizing any underground explosions or even the aboveground explosions. The aboveground explosions killed my father and my sister, and my step-mother, and a good many of my classmates; and I was radiated in one of them. But I understand, at the time, we had serious problems and we had to -- it was the kind of thing to do something even if it's wrong, so I don't have any problem with that. We don't have that situation now and let's get this mess cleaned up.

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The thing that I want to emphasize is there's no such thing as waste disposal on this planet. The colloids that's demonstrated in Cochiti Lake that we mentioned earlier indicate that that is not possible. That's not something that we can even consider. It's totally unacceptable. And that needs to be in that report so that we get the information out of how we can handle this material, and instead of keeping our head in the sand and continue with killing people like we have in the past.

ELLE: Thank you for those comments.

JEFF JENNINGS

JENNINGS: I'm a senior and I am from Pahrump, and among the group of houses buffering or closest in this Pahrump area to the Test Site. I think that my wife has some kind of a radiation situation. And I have talked to Dr. Levazera (ph) about it and she's under medication. So this is very personal to me because morning, noon, and night, I'm thinking of Test Site or private -- this possible private source of radiation emanating from that direction. I'm a member of a press group, Personal Publishers, and a former official editor of a group which enrolled Thomas Edison, whose name in the sciences is well fixed. And I also happened to be at Columbia College, a Science A student, among a group of a half a dozen who were privileged by Dr. John R. Dunning to conduct the cyclotron in the basement of Rufene (ph) Laboratories of Columbia University; the tests that led to the Manhattan Project. And in fact, why Manhattan got its name attached to it was because of the pioneer work being done there. And I also had, in background, the photographs of the building of the

Hoover Dam showing me as a youngster in church school. And the mother of the chief honcho building the dam, Frank Crow, had supplied her with these blown-up photographs of the progress as it became along rather rapidly. In fact, I think they were a year or so ahead of schedule in finishing there. And it was notable work in developing our desert here. And I certainly hope that Nye County, as Sally Devlin has pointed out, it's not only larger than many states, our area of county, but it is also close to California which is the chief port nearby for the Pacific rimming in having a world view of the situation. And of course, of an interest to our economy, the matter of attracting people to the Las Vegas area.

We do have the possibility of a good science museum, and that is a key note of the county Commissioner Chairman Cameron McRae in his reporting on his dealings with the government on the land situation in general, that there has been an indication that a good science museum will be part of the tourist attraction that we can make here. And I believe that the matter should be addressed by the authorities of the Department for the general understanding of the public, and I think the world was mentioned. But I take exception. I was going to say

just briefly, amen to Sally here. But I know the previous speaker said something about impossible, to go 10,000 years into the future, as some of the studies are. I think that we should have some expectation that on the upward curve, we are going to find that there is a development, human potential can realize great things. We have great things in the past and it won't stop. I think we're on the up. So I'm hoping that the studies, without any rebble rousing to put them down, it may be pursued and we can make it possible. And I come immediately. I've been here six years from the -- where there's a tug of war, our two possible presidential candidates. The Arkansas River is on the South. And up in the North, we have Mr. Dole in the area of Wichita. They call it the Kansas River. So I think with that disagreement, we're going to have a lot of further developments of the personalities of it. But if on the socioeconomic point, which I chose to make a comment on, we can address the larger view of the problem. My best -- I challenge you, my paper that I edited, is called the Counter Design. We hold the challenge of a mighty line, God grant us grace to give the counter sign. And may you be privileged to offer it to us.

Thank you.

ELLE: Thank you very much.

THOMAS JOHN

JOHN: I'm Thomas John, I'm a geologist out of Beatty, Nevada. And I'd like to make a comment on alternate use at the Nevada Test Site. Most of the recent discussion has to deal with the Solar Enterprise Zone. In the Nevada Test Site, there are at least three known areas of mineralization that had been worked prior to the Nevada Test Site in the 1800s all the way up through the 1930s. And I would like to see some more investigation done towards mineral exploration and possibly the mining activity within the Test Site. 24

Thank you.

JAMES QUIRK

QUIRK: I am James Quirk from Amargosa Valley. And I didn't get prepared completely for what I wanted to say tonight, but I'll wing it. There's about 1,200 people in Amargosa that's very concerned about the impact of the waste dump on the environment, 25

and they're speaking of themselves; the people of Amargosa Valley and the people of Nye County and the people anywhere on the route. The people of Amargosa themselves are anywhere from 10 to 30 miles away from Yucca Mountain; and that's downhill, down floodplain, downstream. And our first concerns aren't with how many jobs it's going to create or how much money it's going to bring to our valley, as our county is very concerned about how much money it's going to bring them. 26 Our concerns are more for human lives and our health. And we don't trust the federal government, we don't trust the state government, and we definitely don't trust the county government to give us an honest evaluation of the Test Site or of the nuclear waste dump. 27 And that's our biggest concern, is our trust for the government in all its forms.

So speaking from the experience in the past that we've had with the federal government and the state on different circumstances surrounding the Test Site and the waste dumps, the low-level nuclear waste dump. In the '70s, they had a problem with personnel. The personnel took the cement mixer and the cement that they were supposed to solidify the nuclear waste with before they put it in the ground, to make it more safe so it doesn't kind of flow out

into the soil. And they decided to contract it out to local citizens of Beatty. And they took the cement over there and built slabs and other things. And they just poured the liquid waste into the ground. So right now, the liquid waste is leaching out into the soil and into the water supply, and it will soon be flowing through Amargosa and we'll have to contend with that. 28 Now, we might get the story from the government that it's moving an inch per every 30 years and we may never see it until the year 2070 or 3099, but I don't believe it.

The same thing happened at the Test Site. They thought -- the scientists believed that when those explosions underground happened, that they would form this big glass ball around everything and keep all the waste contained inside this glass ball. Well, the glass ball broke and stuff is leaching out now into the soil, then it will be hundreds and hundreds of years before it gets to any humans is the story; but it's out there. So anyway, that's our concern, so thank you. 29

(FORMAL MEETING ADJOURNED AT 7:30 P.M.)

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PUBLIC HEARING TRANSCRIPT 3

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

(QUESTION AND ANSWER PERIOD)
and
(PUBLIC COMMENTS)

Held at the

RENO STUDENT UNION HALL
Reno, Nevada

on

March 19, 1996
Beginning at
6:40 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

KEY to Transcript Symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "Verbatim -- in the exact words; word for word."

Dash: [--] Indicates a sentence not completed by speaker.

Dots: [...] Indicates something was said by the speaker, which, as spoken, is neither audible nor decipherable to the reporter or from the taped cassette recording.

(ph) Indicates phonetic.

(sic) Represents exactly as said by the speaker and is used to alert the speaker/reader to an error in the record.

Parentheses: ( ) Words within parentheses are reporter's explanatory comments.

VOICE: Indicates an unknown speaker.

Uh-huh: Indicates affirmative answer.

Huh-uh: Indicates negative answer.

ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING AGENDA

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RENO, NEVADA, MARCH 19, 1996, 6:40 P.M.

QUESTION AND ANSWER PERIOD

VERNON BRECHIN

BRECHIN: You listed the radioactive isotopes left from underground testing close to the water table. Why is it segmented into those on Pahute Mesa and those that are off Pahute Mesa? And can you describe specifically what is defined as Pahute Mesa; which boundaries, what area?

ELLE: Pahute Mesa is the north end of the Test Site, and the secondary is Yucca Flats where we've conducted most of the underground nuclear tests. So the reason they are presented that way, is that the source terms are different.

BRECHIN: Does it have anything to do with the Air Force Memorandum of Understanding or the withdrawal of a certain segment of the Pahute Mesa?

ELLE: No, it does not.

ART JOHNSTON

JOHNSTON: Could you describe the techniques you use for low-level radiation, the disposition of those products that you will be taking there. How deep will you put them? What type of containers do you put it in? How does that work?

ELLE: The low-level waste is transported in DOT-approved containers. And we take the containers off the trucks and put them in what we characterize as shallow trenches, and those trenches are probably 100-feet deep. And then we stack the stuff up and then cover it with probably 30 feet of dirt.

JOHNSION: It's there then at 100-foot deep. How long does it take for that type of material to become no problem to the environment, and what happens to the materials themselves if we're talking about 1,000 years, for instance?

ELLE: From a radioactive point of view, the half-life of the radioactivity defines how long it's going to be there. For some radionuclides, it's going to be there for a long time; forever. Clearly, the nonradioactive elements, they will also be there forever because they don't go anywhere.

JOHNSTON: But what I'm saying is, if you put something like iron or dirt that has radioactivity in it and you put it down there, what happens to -- doesn't that iron in 1,000 years, for example, disintegrate into dust or something? How long does it sit there like that?

ELLE: It will sit there forever.

JOHNSTON: It won't turn into ferric oxide or anything and slough off and --

ELLE: It may do that in the package that it sits in, but it will stay in that environment.

JOHNSTON: But is the package that it's in sufficiently sturdy that it would stay intact for this long period of time?

ELLE: No. The way we characterize low-level waste disposal from a performance point of view, you look at the environment at the Nevada Test Site and how radioactivity may move from where we put it in the low-level waste facilities. And because of its arid environment and because there is no groundwater transport through the waste itself, the analysis indicates it will sit there forever, until it either decays and is not a radioactive problem; and then it becomes like any other element in the ground. The risk from a modeling point of view, if

somebody 10,000 years from now going in and either drilling into it, or doing some other activity that may get into that waste, is the limiting condition under how we can dispose of that low-level waste.

JOHNSTON: But you rely on the nonremovability of this stuff as the secret of your successfully putting it there.

ELLE: That's right. That's essentially the basis for any land disposal of waste, whether it's sanitary or hazardous or radioactive. If you put it some place, and you expect it to stay there.

ADAMS: Steve Adams. Just one comment on the gentleman's questions on low-level waste. There is many categories of waste that are generated in nuclear and nonnuclear operations. The most benign category is low-level waste. Both the Department of Energy and the NRC; and to an extent, the Europeans, that in defining what the concentrations of the radionuclides in the low-level waste it's based, that after 100 years, that concentration is not going to be any greater than the radioactivity in normal dirt. And so essentially, after 100 years, the radioactivity in low-level waste is at the same activity as dirt. And insofar as the way it's packaging, the Environmental Impact Statement that was used in

developing 10 CFR 61, the regulations for the -- the federal regulations for operating and shutting down the low-level waste site take absolutely no considerations of the protection for the packaging. It was assumed in that EIS and the analysis of the performance that supported that EIS, that the package disappeared and the waste was right out there, or it can be contacted by shallow land water. For instance, not here in Nevada where that's not of any concern, but also in the very humid and wet Southeastern United States.

So insofar as any concerns you may have on the risk of low-level waste, it's good to remember that again after 100 years, it's no more radioactive in soil that the closure for low-level waste site has to be designed to ensure that it's not going to be distributed within 300 years. Then like Dr. Elle mentioned, that also the design of the closure mechanisms, whether it's a cap or the waste like that's happened in the Midwest and the Eastern United States, is disposed of in a more highly engineered facility; that the extreme model that was used to determine the risk was somebody coming in and intruding right into the waste disposal units and digging right down to the units. So to be able to be

classified as low-level waste, relatively speaking, especially compared to say high-level waste or transuranic waste, or other waste forms, low-level waste is very benign.

LEE DAZEY

DAZEY: I would just like to make a comment on Mr. Adams' comment. Are you neglecting the particles within low-level waste such as plutonium, which is a half-life?

ADAMS: But to be able to have plutonium in your low-level waste, the concentration has to be very low. And so if you look at the total risk from all of the contributing radionuclides, they were defined so the risk of all the radionuclides are allowed to have, cannot exceed that normal background soil after 100 years of decay. And so essentially what that means, is radionuclides, like plutonium, like uranium, are only allowed to have very, very low concentrations or the material generated would not be low-level waste. It would be, you know, transuranic waste. For instance, in the case of --

DAZEY: But still, they remain in the soil, even in small quantities.

ADAMS: Oh, yeah, they're in the container. But you also have to remember, if once the plutonium gets up above a certain concentration, the waste has to be stabilized and solidified to meet certain quality, control and quality assurance; which means they have to take the waste form in. They have to put it under certain conditions of heat and pressure for a long period of time without any of that leaching out. And until the regulatory agencies have gone in and audit the waste generators to assure themselves that the waste form is meeting those criteria, they cannot dispose of it as low-level waste. And that's federal regulations throughout the entire United States. And that's a good question and it's a concern. I mean, if you hear things like plutonium, you know, all the flags and bells and whistles go off in your mind and that's very hazardous material; in most people's minds. And that's why the lab concentration of plutonium and low-level waste is very, very low in the comparison to other radioactive material, like tritium or cobalt, or the isotope of your choice.

ABBY JOHNSON

JOHNSON: Abby Johnson with Eureka County. I have a couple questions. I haven't read the document yet, and I've arrived late, so I apologize if you already covered this. Does the document address the use of the Nevada Test Site for air space?

ELLE: Yes, there is a discussion in there about air space use, both by the Department of Energy and other organizations.

JOHNSON: What does it say, like you can do it or you can't?

ELLE: We do. I mean, we do use the air space today and we would continue to do that under Alternative 1.

JOHNSON: For the Air Force?

ELLE: Right.

JOHNSON: Only?

ELLE: No. The Department uses the air space as well for some of its own activities.

JOHNSON: Is there a contemplation of increased use of air space to promote the operation among the branch services and to minimize the impacts of air space on other parts of Nevada?

ELLE: I don't think we analyzed it in terms of minimizing the impacts on other air space in Nevada. We did analyze it for increased use of the air space on the Test Site.

JOHNSON: Okay. My second question concerns your statement about cumula -- that the cumulative impacts, that you define that as no impact on Southern Nevada economy and growth. My understanding of cumulative impacts, if we had been doing this 30 or 40 years ago, given there was no NEPA at that point, the impact of those activities would have exceeded Southern Nevada.

ELLE: (NODDING OF HEAD)

JOHNSON: Why have you limited it this time to Southern Nevada?

ELLE: The analysis of cumulative impacts is more than just Southern Nevada. I was trying to summarize a piece of the information. But the cumulative impact analysis includes everything around the Test Site as well.

JOHNSON: Including transportation effects in Northern Nevada?

ELLE: Yes.

JOHNSON: Okay.

ELLE: The Transportation Risk Study

includes that information.

JOHNSON: Okay, thank you.

VERNON BRECHIN

BRECHIN: I just went through the Waste Management PEIS and it defines the various waste categories.

ELLE: Uh-huh.

BRECHIN: Low-level, high-level, transuranic, mixed waste; combinations of some of these in the forms of mixed waste. I've never seen a description of the waste left by underground explosions as one of those waste categories. I've never seen those 600 million curies listed as part of the inventory of nuclear waste. Why is that?

ELLE: Well, we consider it part of the inventory of waste that is generated from activities, either restoration or other waste disposal processes, in terms of the inventory that needs to be treated or disposed of. I think that's the simple answer.

BRECHIN: I have another question. In the first Implementation Plan, the draft, it had a mention of classified transuranic waste in there. The final Implementation Plan eliminated that, it didn't

have that in there at the same areas. It simply didn't mention it anymore. This EIS, Draft EIS, does mention classified waste. I think the EIS should be a little more specific about what it is and why it is classified.

ELLE: Okay. That's probably a legitimate comment.

BRECHIN: At the DOUBLE TRACKS site, has any site restoration started there yet, and what do they plan to do as far as site restoration there?

ELLE: Restoration has not actually started. They've done site characterization. There is another NEPA document, Environmental Assessment, that's been issued talking about the alternatives for what it is they want to do. One of the things they propose to do is actually scrape about six inches of dirt off the surface containing plutonium or contaminants, packaging it and moving it to the Test Site.

BRECHIN: What happened to the Lockheed Martin Plan for separating the soil and creating concentrated versus nonconcentrated stuff?

ELLE: I think the cost got in the way of what they were trying to do with that and that's not part of the project that's being considered. If you

want a copy of that EA, we can make sure that you get one.

BRECHIN: Yeah, I'd like that.

ELLE: Okay.

BRECHIN: And on the Project 57, was there any previous effort to clean it up, to scrape soil off of it? That's Area 13.

ELLE: Yeah, that area has had restoration -- different kinds of restoration activities done. The original scope of that included some soil mediation in terms of stabilization and natural grasses. But again, that's a site that we're considering for future remediation and clean-up.

GARY GRAY

GRAY: What was the time frame for the final draft, just out of curiosity? I think you might have mentioned it and I might have missed that.

ELLE: I think the time frame I have on the viewgraph is July for the final.

GRAY: Okay, thank you.

PUBLIC COMMENTS

VERNON BRECHIN

BRECHIN: My name is Vernon Brechin. I've been -- I'm with Tri-Valley Cares, an organization in Livermore, California. One thing we know about the Nevada Test Site, is it functions largely as an adjunct to the other national labs; Lawrence Livermore National Lab, Los Alamos National Lab, and Sandia National lab. These labs all have remote areas in which they test various things. At Livermore, they have Site 300 for certain explosive tests and things like that. Sandia has large areas and remote areas within and outside their normal property where they do tests. Los Alamos also has remote areas around the lab where it does tests. In some cases, the tests are so dangerous or represent such a potential impact to humans, that a much more remote area has to be found to do those tests. In this case, oftentimes it's the Nevada Test Site. And this is one of the resources that's advertised about the Nevada Test Site, its remoteness from generally human populations. It's largely oriented about human populations. I prefer to look at the earth as a

sacred place, all parts of it, including the underground areas; the animals, the plants, everything. But I noticed these Environmental Impact Statements are generally oriented around the impacts upon man. They do consider plants and animals, but that's largely because of the way the laws have been positioned because of scientific studies. Anyway, it's a little off the subject.

First of all, I'd like to mention about the withdrawal of the Nevada Test Site. It was withdrawn from -- it's in the Draft EIS. And it was withdrawn in four sections. The first section was withdrawn as Public Land Order 805. Originally, this land belonged to the Native Americans. Later on, the white man came into the territory and a thing called the Bureau of Land Management was established. And they made certain areas in the West, large areas in the West public land, public property. Certain of these lands were withdrawn for certain purposes, such as for weapons testing and other things. Some of that land was withdrawn for the Atomic Energy Commission. And the first withdrawal was specifically for reserve for use of the U.S. AEC as a weapons testing site. Now, we all have to judge whether it is still being used for its intended purpose. This land was

temporarily withdrawn. It was originally intended to be returned back to the American people.

If you read the Draft EIS, you will realize that there's -- except in Alternative #4 -- there's little talk of returning the land back to the people. In fact, some areas of the property, the DOE admits, will never be returned back to the American people. In fact, the DOE seems to expect that they will receive funding to guard these lands to prevent the public from getting hurt on these permanently destroyed properties; that guardianship -- which I must remind you about the Nuclear Stockpile Stewardship Program, it's related to it -- that guardianship will have to be probably at least a half-life of plutonium, which is 24,000 years, or extend that out to about a quarter million years.

This is going to be hit-and-miss because I haven't prepared too well, but I have read through the document. As far as site restoration activities. Here's a document produced in December of 1974, a Summary Report, Central Nevada Test Area Demobilization and Restoration Activities. This talks about the restoration of the Central Nevada test area back in 1974. The environmental reports out of the Nevada Test Site have been mentioning since at least

1990, about plans to restore the area and other things like that. I should also mention that there is quite 2 a few other sites that aren't mentioned in the report. There's the test site in Mississippi. There's two underground test sites in New Mexico. There are two nuclear test sites in Colorado. There are two nuclear test sites in Central Nevada which are addressed in this. Three test sites on Amchitka Island in Alaska. Anyway, these should be addressed. Also, other sites that weren't addressed in this Draft EIS, but which are being addressed somewhat, one site in the Stockpile Stewardship, is the North Las Vegas facilities where the contractors are. There are also a number of sites in California and scattered around the country.

One thing I've noticed in researching this stuff, is that there appears to be a certain set of documents that are like internal documents that are utilized, and then another set of documents that are like available rather freely to the public, and oftentimes by law. I think much more of the information contained in the internal document 3 should appear in the public documents. Such as these sites at the Nevada Test Site, there's like two sites in the Santa Barbara area, one site in Pleasonton, and

3 cont. other things. I think you should explain what these sites are about and other things like that.

And before my time ends, I want to mention the Lyner facility. I just read in the classification things, that the codes associated with state of equation experiment are considered classified, they are not to be released. The tests to take place in the Lyner facility are supposed to deal with these state of equation codes, supposedly for the safety and reliability of our weapons and to 4 understand better the aging properties of the plutonium, which very few people seem to understand why these tests need to take place. But anyway, the tests will scatter a substantial amount of plutonium in these rooms. The explanation in the Draft EIS says 5 very little about anything close to where the tests are to be performed. I don't see how describing the scattering of plutonium in an underground room a few miles -- about 20 miles from Yucca Mountain is going to expose the classified information of the equation 6 of state equations, and give any kind of information about the design of nuclear weapons or anything like that. This is one of the major things that should be in the EIS. Secretary O'Leary and the Waste Management Department at DOE Headquarters is very

strong on this; that when information impeded environmental restoration or awareness, that information should be made public, unless there is absolute proof that the exposure of that information would compromise classified information.

So I would say that in the initial thing where they described the Lyner complex, when they're describing the areas at the Nevada Test Site, it says, three lines here: "The Lyner complex is a mined underground complex in Area 1 that is available for dynamic experiments and hydrodynamic tests that 7 cannot be conducted aboveground, because they may contain hazardous materials." I consider that a gross understatement.

Also, one last item, the maps in here of the Nevada Test Site. There's one map that's 8 accurate and that deals with the land withdrawals. It does show an area that was once labeled Area 51. All the rest of the maps do not show the area. Some of the maps show the borderline terminating and opened up in the area where Area 51 takes off. Most of the maps just have a closed border there, they don't show anything. This is still on the books. It's still part of the Nevada Test Site. I have been trying to find out who is responsible for it and can't seem to

get any information. Why does this compromise national security?

ELLE: Appreciate your comments, Vern. And we look forward to -- I presume you're going to provide more comments in writing.

BRECHIN: Yes, written comments.

LEE DAZEY

DAZEY: My name is Lee Dazey. I work with the Northern office of Citizen Alert. For those of you who don't know who we are, we're a statewide nonprofit environmental group. Our issues have been the nuclear waste issue, Yucca Mountain being foremost, which is on the Test Site; even though it's not included in the Nevada Test Site EIS. First of all, I'd like to make the comments for my son. This is his comment on the whole project. (Indicating) (Laughter) "A little smiley face."

And then the comments that I'm prepared to make -- I also haven't reviewed the whole -- that whole draft. I've looked through the summary and the Resource Management Plan and a few other of the documents. And I've made some just general comments on it. And our comments, formal

written comments, will follow later at the May 2nd deadline. But let me just read my comments. While the Draft EIS refers to a primary mission of the DOE NTS as maintaining a readiness to conduct tests, and if directed to do so by the President to conduct these tests, the draft consistently refers to missions; that's plural, to include activities related to waste management that it has been involved with for over 30 years, but for which the land was not withdrawn for. With this said, there is really no true action 9 alternative, because a true no-action alternative would be to only maintain a testing readiness. And the DOE's no-action alternative states that operations in all the five mission categories would continue in the same manner and degree as they have during the past three to five years. Now, as part of NEPA, I don't know -- I'm sure everyone here knows, but I'll reiterate this point, that NEPA requires a true no-action alternative.

Of the nuclear testing scenarios that are outlined in Alternative 1, and I'm referring 10 to the summary which is something that we can all read pretty easily, it's only the second that is a true no-action alternative. Because the first, the Stockpile Stewardship experiments and operations,

10 cont. would construct new facilities in order to conduct the hydrodynamic tests that Vern was referring to. The alternative in Alternative 3, or the expanded-use option, includes all of the programs in Alternative 1, 11 and adds all the new programs such as solar; but fails to include the Yucca Mountain Project or the potential interim storage facility in the expanded-use version.

During the implementation phase of this EIS, we were told that Yucca Mountain wasn't included because a separate EIS was to be done on the Yucca Mountain Project. The fact that that data though from other NEPA programs, such as the Waste Management PEIS and the Disposition PEIS are included 12 in this draft, no longer really excuses the data from the Yucca Mountain Project, we feel to not be included. Instead of supporting one alternative in its entirety, we encourage, as the DOE states in the draft, that participants can suggest hybrids; and we think that's a good idea, with the intent of the true no-action alternative only maintaining a readiness to test and not engaging in the Stockpile Stewardship 13 Program. And this would be because of the concerns that the Stockpile Stewardship Program could jeopardize the U.S. position in the Nonproliferation Treaty that the international world body is trying to

13 cont. get towards.

Alternative 4 leans towards a no-action alternative, and we think this alternative is probably one of the best in its entirety. And that 14 the fact that it doesn't allow waste management activities to go on, except for the waste that's generated from environmental restoration and the Nevada Test Site, is a pretty good thing. We would like to see that the environmental restoration be coordinated with the goal of certain portions of the 15 NTS returned back to the public domain for a purpose which could include the return of land to the Western Shoshone, because after all, the Treaty was not abrogated.

As far as we can tell, under the unavoidable adverse effects in the summary section, no alternatives describes clean-up at either NTS or 16 off-site locations, because presumably -- and I'm referring to the testing, I guess I missed that here -- because it cannot be cleaned up. This needs to be explained. Therefore, the statement under Alternative 4 under unavoidable adverse effects, it 17 states: "The unavoidable adverse impacts of past underground nuclear testing activities would remain," really should be under each alternative because it

cont.

17 can't be cleaned up under any of them. So we felt that that was a little misleading.

Hydronuclear testing should not be embraced, because the DOE acknowledges in Alternative 1 that a hydronuclear testing has its impacts. And I quote: "Other testing and 18 experimental activity in support of Stockpile Stewardship Programs would have smaller impacts in relation to standard nuclear tests with lower yields but with chain reactions."

And then we feel that the Resource Management Plan is a very important document. And we understand, from reading through it, that it's fairly -- it's at its infancy stage. But I did want to make a few comments on that. We applaud the DOE's commitment to including Ecosystem Management and a Resource Management Plan. We are concerned that an emphasis -- through -- in this Resource Management Plan, there's an emphasis which we see on manmade resources. And we feel that we don't want those to prevail over 19 the natural resources at the Test Site. And I quote: "Natural resources are not the primary management focus of the DOE's NTS missions affecting the potential for clean-up of NTS."

Stakeholder involvement is going

to be crucial for the success of the RMP, especially with the Native communities in Nevada; as the RMP focuses on the inventory of parts that make up the NTS, while people whose lives are intertwined with the land, will be able to give the holistic perspective and social value that is at the heart of Ecosystem's Management. Because the long-term impacts of some DOE Nevada activities on the Ecosystems are not well 20 understood, as is stated in the RMP, we think it's important to embrace a mission that acknowledges this fact. The goal-oriented approach for the RMP is good, but goal-oriented approaches often are toothless watchdogs, especially if NTS mission decisions are made that give priority to manmade structures over natural resources of the Test Site.

Would the DOE be willing to amend 21 its mission if the goals of the RMP cannot be met under the DOE's land use decision at NTS? We think it's paramount that the RMP or the Resource Management 22 Plan address NTS for the long-term and not just adhere to the ten-year period which the NTS EEIS is addressing. We would like to see the RMP referred to stakeholders in regard to the use of models. We find 23 that models are expensive, and since models only predict often to the detriment of protection of our

cont.

natural resources, monitoring as described under 23 adaptive management should be relied upon to assess impacts to resources over the expensive and unreliable models.

Citizen Alert is concerned with this statement under the Draft Resource Management Goals: "There will be times when mission requirements and/or goals for resources conflict and cannot be achieved simultaneously." Of the possible solutions to conflict resolution identified in the draft, we 24 would prefer to see flexibility with regard to modifying existing or proposed missions rather than not achieve the RMP goals.

And then under the RMP goals, I made a few comments under the section of existing missions. We would like you guys to identify which new uses of NTS may interfere with critical operations 25 of existing missions or create extra costs for these missions. Under site support activities and facilities and health and safety, which I combined goals, goals of these two need to be integrated in 26 order that sites for new facilities take maximum advantage of existing site support activities and in areas that comply with applicable safety regulations with minimal radiation and other safety risks. So we

just combined those two goals. We think that that's important to combine them; that not just should we look for the easiest cost, but also for reducing the safety risks.

Land. We support the goal that facilities be designed and constructed to fit the site 27 in terms of suitable slope drainage and other natural features, even if there are additional construction costs. Water. The second goal of maintaining the quality of NTS waters, that are presently clean enough to be in compliance with state and federal standards, seems more achievable that the first -- it seems more achievable than the first goal, which is maintain an adequate water supply -- sorry about that, I think I botched up a line here. How much water is available at NTS? Do we really know how much subsurface and surface waters? And if we do know, we'd like to see 28 that included in the Resource Management Plan. And as the desert has a very low recharge rate, when will the water supplies run out? That needs to be asked.

Cultural and American Indian resources. We think it's important to identify and 29 protect not only the resources and cultural values of American Indians in order to comply with all the appropriate laws and regulations, but those resources

not protected by laws with the west -- which with the Western Shoshone and Paiute people have identified. So again, it's really important to include the Native Americans in the area.

Biological resources. While the previous goal, the Cultural American Indian resources, has a disclaimer stating that the ability to achieve this goal will be constrained by the requirements of on-going missions and safety considerations on the NTS, can we also expect this goal to be restrained by mission? Is the biological goals, can they be impeded by a mission?

Air quality. How is the air quality deemed superior at NTS enough to warrant a goal on maintaining it when radionuclides in the soil can blow about in the winds? I'm not sure exactly what particulates you're looking at or which parts of the air quality, but we think that -- you know, certainly the plutonium that exists in the soil needs to be factored in, because it states that we have superior air quality at NTS. And I would like to know how that is arrived at.

Geological and mineral resources. The issue of new exploration of minerals at NTS might create more contamination needs to be addressed for

this goal to be a goal that we would support. I guess under one of the alternatives it's possible that the NTS could now be opened up for mineral exploration; but to what extent should it be if contamination is going to be introduced into the environment?

And then finally, I didn't have a chance to really look through the Transportation Document. But one thing I noticed that has to do with the number of shipments related to low-level waste. The identified number of shipments of low-level waste in the Nevada Test Site EIS needs to be coordinated with the Waste Management PEIS, which comes up with a whole different number of shipments. And then the NTS EIS needs to address routing requirements, because as it is right now, low-level waste routes are pretty much up to the carriers and routing decisions and routing requirements. So we think that that needs to be addressed in the transportation portion of the EIS.

So anyway, thank you. And we'll be submitting some more comments.

ELLIS: Well, I thank you very much for coming and I appreciate your comments. And if you want to send us written comments or give us other information, we'd be very happy to have it. Thank you very much.

(FORMAL MEETING ADJOURNED AT 7:30 P.M.)

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PUBLIC HEARING TRANSCRIPT 4

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

(QUESTION AND ANSWER PERIOD)
and
(PUBLIC COMMENTS)

Held at the

CASHMAN FIELD CENTER
850 Las Vegas Boulevard North
Las Vegas, Nevada 89101

on

March 26, 1996
Beginning at
6:40 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

KEY to Transcript Symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "Verbatim -- in the exact words; word for word."

Dash: [--] Indicates a sentence not completed by speaker.

Dots: [...] Indicates something was said by the speaker, which, as spoken, is neither audible nor decipherable to the reporter or from the taped cassette recording.

(ph) Indicates phonetic.

(sic) Represents exactly as said by the speaker and is used to alert the speaker/reader to an error in the record.

Parentheses: ( ) Words within parentheses are reporter's explanatory comments.

VOICE: Indicates an unknown speaker.

Uh-huh: Indicates affirmative answer.

Huh-uh: Indicates negative answer.

ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING AGENDA

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LAS VEGAS, NEVADA, MARCH 26, 1996, 6:40 P.M.

QUESTION AND ANSWER PERIOD

MICHAEL DEFLORIA

DEFLORIA: Michael Defloria. We have been making this most deadly poison known to man. When are we going to stop making it? We still don't know how to dispose of it. It's going to cost us billions and trillions of dollars to dispose of it. When are we going to quit making it?

(APPLAUDING FROM THE AUDIENCE)

DEFLORIA: Have you had anything in the future when you're going to stop making it? You know, the sun has been burning there for trillions of years, all the energy you want for free. You know it's there, they know it's there.

ELLE: I don't believe we have a simple answer for that question. If you --

DEFLORIA: Well, you have all the most brainy people in the world, you should have an answer for that.

ELLE: Well, I don't have an answer for it tonight. And if you want to give us that as a

comment, we'll be able to look at it and try and give you an answer.

DEFLORIA: I have a standing offer to any local, state, or federal politician. I will give them $5,000 cash for every problem they solve, and they pay me for every problem they don't solve. I see you don't have an answer to a simple problem. With all the brainy people we have in this country, and we can't solve simple problems? Come on folks, you're all government employees. Do you --

ELLE: Let me be clear, that when you get ready to make your comments, we have the process in place to do that after we take a break. But I do want to answer some general questions.

LEWIS GARY

GARY: My interest is in what is meant by fissile materials?

ELLE: Fissile materials in the sense of the document that they're going to be talking about in the next couple of days, is material that you can use in the manufacture of nuclear weapons. It's material that fissions that creates energy.

GARY: Okay. And that is separate from

the waste it comes from?

ELLE: Yes.

TOM MC GOWAN

MC GOWAN: My name is Tom McGowan. There's a two-part here. Will the gentleman who offered the $5,000, see me right after the meeting; I'll give him the solution he's asking for. It's called eliminations. It's been quite well-known for several decades. My question to Dr. Elle is -- is it Dr. Elle?

ELLE: Yes.

MC GOWAN: There was some high-explosive testing completed out at the Test Site, I believe a year or so ago.

ELLE: Uh-huh.

MC GOWAN: And what were the results of that and how does that correlate with the testing -- the High-Explosive Testing Program recently announced by Bechtel as innovative in some way? The third part to that, of course, is what are the expectations from the Bechtel operation? Is that simply a make-work to get the place on the back burner open, or is there some realistic, anticipated, positive benefit in the

broader horizon of alternatives ensuing forthcoming from that? I would like additional alternatives, but if you will make the time allotted for the recommendations, I'll be happy to provide you with some. Thank you.

ELLE: Okay. I think the simple answer is, the Bechtel Proposal is clearly one that they believe they have an opportunity to bring projects and activities to the Test Site. The explosive work that was done by Livermore is not connected necessarily with what Bechtel is proposing. They are consistent activities that can be looked at within the framework of the EIS and the Resource Management Plan.

WILLIAM VASCONI

VASCONI: Bill Vasconi here. Early on, you mentioned a fact that some of these alternatives could be intermingled.

ELLE: Uh-huh.

VASCONI: In looking over the EIS, Alternative 4 which is withdrawn lands, you had quite an extensive mass of land north of the Yucca Mountain Site Characterization Facility. That was in Alternative 4. As you look at the map on

Alternative 3, that same section of land is left unused. And would it be permissive to utilize that land, just as it was going to be used in Alternative 4, for recreational use because of the timber and the Indian cultural areas? And one of the other things included in it, was the fact that with the game we now have there, it would be advantageous to include that in Alternative 3, which is the maximum use of the Test Site.

DEFLORIA: That land belongs to the Shosone Indians, sir.

ELLE: The answer to that question is, as we put together the preferred alternative, return of that piece of the land out of Alternative 4, is certainly one we can look at; but in concert with other activities and other proposals that we have in this document. And it's comments like that that influence how this preferred alternative gets put together.

DAVE TIMOTHY

TIMOTHY: I'm Dave Timothy. Wasn't the boundaries of the Test Site just expanded just recently again?

ELLE: I don't believe so. The land withdrawals that we identify in this document are probably in the 1960, 1950 age.

TIMOTHY: I think you will find, if you check, that the boundaries that border Area 51 were just expanded, and more of that area has been placed under government's supervision and control and even was up until recently. This expansion seems to keep getting larger and larger. And even the public lands that were accessible to the public, are now not as accessible as they were.

ELLE: Right.

TIMOTHY: My question is, with the DOE's past history with what's taken place, how do we know that they're even interested in finding out what we want or that we can know that what we're being told is the truth? There's many of us who experienced grave lives from the DOE on dosimetry and many other things as far as the radioactivity and the effects. How can we know that what you're telling us is the truth?

ELLE: Well, in simple terms, whether you believe me or not, the broad experience of the people that put this document together, and the broad experience as the public that has an opportunity to read it, and the resources and the references that we

use in putting it together, that's the reliance that we put on making sure that the information is correct. And there is an opportunity to check the numbers, to check the process. That's why we have a public comment period. And we invite people to look at and challenge the information that we've put in our document. And we are here and have been here collecting comments from people, and we do have an interest in people's comments and how they view the work that we've done.

LATHIA MC DANIELS

MC DANIELS: Don, I have a general question for you. My name is Lathia McDaniels. And this is in regards to the EIS process. When you generate the Final EIS, will it follow the same format as this Draft EIS? Because my concern is, once you identify and detail the preferred alternative, will you also do a cumulative impact assessment on the preferred alternative, and will you also have the unavoidable assessment, impact assessments?

ELLE: The answer is, yes. When we put together the preferred alternative, we'll go through the same analytical process that we have done with

each of the four alternatives. We'll identify the impacts of that preferred alternative.

MC DANIELS: And my last question is -- and I asked you this a couple of months ago -- will we, "the public," have an opportunity to review that preferred alternative and make comments to that through another public hearing? And I think your answer before was "no." So what opportunity will we have to make comments to the preferred alternative if we have some?

ELLE: We'll issue the Final EIS and then we'll wait 30 days before we issue a Record of Decision.

MC DANIELS: Okay. And that's our time for making comments?

ELLE: If in fact we've not done the right job, or people don't think that we've analyzed it properly, that's the place where people can question what we have done.

MC DANIELS: Okay.

MICHAEL DEFLORIA

DEFLORIA: Can I ask another simple question?

ELLE: Sure.

DEFLORIA: Who is paying for the disposal of this high-level nuclear waste?

ELLE: For high-level waste, the electric utilities have contributed to a fund that's managed by Congress.

DEFLORIA: Yeah, but I read in the paper just about everyday how many millions of dollars is being spent up there. Is that taxpayer's money? Who pays for the wages?

ELLE: It is money that comes out of that nuclear waste fund.

DEFLORIA: All of it?

ELLE: Yes.

DEFLORIA: Wages?

ELLE: Uh-huh.

DEFLORIA: Thank you.

LARRY KRENZIEN

KRENZIEN: Larry Krenzien. I've got a question on the water usage. In particular, the water usage increases under the Solar Proposal by a factor of 3 or 3 1/2. I was wondering why, even though Mercury already is fairly high?

ELLE: It's primarily for cooling, I believe, in that solar category of activities.

KENZIEN: Okay. Just a comment. On Page 514, you have an error in the annual usage of Las Vegas water by a factor of 1,000.

ELLE: Okay.

JOE BACA

BACA: I worked at the Nevada Test Site from 1962 to 1970, and I worked in Area 51. And you can't trust DOE because they lost all my records. And I worked out there when the BANEBERY blowed (sic) out. And now they claim I never worked over there. They lost all my papers. But here's the key and my badge number right there, (Indicating) and I'll prove it to DOE. And they still refuse. I worked out there when BANEBERY blowed (sic) out; in G-Tunnel, J-Tunnel, K-Tunnel, even waste in Mercury where you build those buildings for the people to stay, some of the employees. But you can't trust DOE because I went over there and proved that I worked there. And a lot of people died. And when BANEBERY blowed (sic) up, they send us in there and they had us like regular electricity matches on our body. We are only few

living right now. I can't work anymore and they never helped me. But I proved to DOE they're wrong and don't trust them.

ELLE: Okay.

BACA: Wait a second. And we worked out there, we did all the cleaning up. And some of the vehicles were full of radiation; when the people, like Reynolds Electric and DOE sold them to the public here in the state of Nevada and different states. And I can prove it to you. Thank you.

LEWIS SKERRY

SKERRY: This is Lewis Skerry. Something I was uncomfortable with in the report was the climate. A lot of your models used current climate, but yet we're talking about storing waste for 10,000 years. And I believe the climate has changed considerably in the last 10,000 years, and I believe it will change considerably in the next 10,000 years. And I just wanted to raise an objection using today's climate for what we can expect in the next 10,000 years.

ELLE: Okay.

SKERRY: Also, there was the closure of

some of the waste disposal pits. There was mention of the Integrated Closure Plan and Program. I am interested in the information that is in the Integrated Closure Plan, but it's not available to me in the EIS.

ELLE: I'll point out to you the technical people that are with us tonight, and they can get you the information or tell you how to get it.

SKERRY: I appreciate that. Thank you.

REINARD KNUTSEN

KNUTSEN: My name is Reinard Knutsen. And my question involves the low-level nuclear waste dump in Area 5, which has been described as the most productive waste dump in the country. And I'd like to specifically know what the DOE's proposed action, how that affects the on-going transportation of nuclear waste into Nevada from around the country; specifically through Las Vegas, if there is any EIS studies being done specifically on transportation through populated areas, and also the continued use of that low-level nuclear waste facility?

ELLE: Well, as I mentioned, the Transportation Study that was an appendix to this

document contains the risk assessment for low-level waste transport, the information that you're looking for. And we can talk to you later about how that's reflected in the document, if you wish.

KNUTSEN: Can you say what risk assessment means, the risk assessment of transportation of nuclear waste through Las Vegas?

ELLE: It's risk assessment or risk in terms of the probability of an accident and the risk of a routine truck accident, as well as the radiation risk related to the material that's being shipped. So those risk numbers are in that document and they're summarized.

KNUTSEN: What are the current ways that DOE lets the neighborhood that these waste transportations pass through, what is the current way that DOE incorporates -- you know, let's the neighborhood know that this waste is going through their neighborhood?

ELLE: That happens both at the state level and at the county level. So the government agencies have information about transportation that we provide them.

KNUTSEN: Okay. Could you just say, if this low-level waste dump in Area 5 is indeed the

busiest waste dump in the country at the moment?

COLARUSSO: I'm Angela Colarusso and I work for DOE in the Waste Management Division. And currently, the waste shipments that we're receiving are at a lesser volume than we have in the past. Overall, based on past history, our levels are usually -- the amounts of waste that we receive are usually in greater quantities than are received across the country within the DOE complex. We are the largest receiver of low-level waste within the DOE Complex.

JOLIE LONNER

LONNER: At present, how many shipments of nuclear waste come through Las Vegas? Jolie Lonner.

DI SANZA: I'm Frank DiSanza with the Department of Energy. The answer to that, is that it varies from year to year. For example, last year, there was 916 shipments of low-level waste to the Nevada Test Site. This year, that amount, the number of shipments is probably no more than 400 shipments; and that's projected throughout the rest of this fiscal year.

TROY JONES

JONES: Hi, my name is Troy Jones. And along those same lines, if the HR-1020 Bill, which proposes the shipment of nuclear waste from all around the country to this Test Site goes through, and that's pending in Congress or in the house right now, how many shipments ever can we expect through this place?

ELLE: I don't think we have the answer to that. And until that legislation is passed, I'm not sure what it represents for us.

JONES: Will that increase the amount of shipments coming through?

ELLE: Yes, it probably would.

REINARD KNUTSEN

KNUTSEN: Just one final question. Is this the same dump in Area 5, is this the same design of dump that is in Beatty which has currently leaked radioactivity in the groundwater there? Is that buried in underlying low-level trenches?

ELLE: Yes.

KNUTSEN: And just the waste comes in, in metal barrels, and is placed in these underlying

trenches?

ELLE: Right.

PUBLIC COMMENTS

DENNIS BECHTEL

BECHTEL: My name is Dennis Bechtel and I'm employed by the Clark County Department of Comprehensive Planning, Nuclear Waste Division. But my comments tonight are not the official position of the County, but more my personal interests and concerns. I -- in going through the EISs, I've worked on a lot of EISs and I've commented on a lot of that. And I would like to applaud you, in the sense that the number of topics that have been treated, that I think are too often ignored in EISs. And I speak to things like transportation and public safety and resource management. And I think these are -- I have some concerns about things in the documents, but I applaud DOE for the effort of bringing these issues out.

Just a couple of comments, and Clark County will make a more formal statement prior to the May 3rd deadline. The EIS mentions a number of related EISs that will be considered. They are

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considering things at the Test Site. And I think the document needs to be a little stronger on just stating how the decisions that will come out of EISs and other areas will be treated, either within the NEPA process for the NTS or if there's some conflict in recommendations, how the public is able to comment on that. I think it's important to maybe discuss a little more about the process. Because as you're aware, with the waste management option, Alternate 3, the Test Site is being considered by a number of other sites for say the final, either storage disposal or treatment of waste. So I think that needs to be a little clearer in your final document. And the fact, that hopefully, the public will have a chance to comment on that. I'm a little confused about the -- could you speak to when the actual -- the final Record of Decision will be released for the Test Site. I had heard that this whole thing is kind of on a fast track. And my concern is that a number of people are going to be commenting on the documents and that there's ample opportunity for consideration of the concerns of the public, and that actually reaches the Final EIS.

So do you have a date in mind for the ROD?

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ELLIS: We don't have a clear date in mind for the ROD yet. Clearly, it will be issued 30 days after the Final EIS or later than that. We do have an interest in getting this document done in as reasonable a time frame as we can. The Secretary's interest in getting these kinds of documents issued is 15 months, we've already met met her objective by a few months.

BECHTEL: Okay. A couple of other comments. There are sections about environmental justice in the EIS. And I noticed there's a pretty comprehensive description of minorities, low income groups within the Las Vegas Valley. But I think where it kind of breaks down, transportation is an important issue for Clark County, government, and citizens. And

6 I think you need to recognize that some of the routes that are considered in the Transportation Study actually go through areas where you have high proportions of minority or low income groups. So I think the document needs to discuss that and does not do so.

The main issue that Clark County has been concerned about and is of interest to me is the transport of the waste. And I note in the Transportation Study, that ten routings are examined.

And eight of those seek to be in Clark County. And four of them actually go through areas that I think we would consider as dangerous, potentially dangerous. And I'm talking about the Spaghetti Bowl, I-15, US Highway, Hoover Dam, Craig Road: in an urbanizing area. So I think -- I'd be interested to hear from

7 you, what will actually come out in the way of a decision on transportation with regard to either the Final EIS or the Record of Decision. Will there be -- how will the EIS or ROD treat transportation issues?

ELLIS: The EIS is treating transportation issues in a way that assess the risk of each route. Currently, it's not within the Department's authority to direct shippers on a specific route. Route selection is left up to the shipper. We can recommend which route is best And that may be the way the document ends up looking.

BECHTEL: You know, it seems as if -- on one of the pages in the comments to a question at an

8 earlier meeting, it was noted DOE -- that they could take what I consider a more proactive stance with regard to carriers and contractually defined things like routes, safeguards, and things like that. And I would encourage you to go with your own recommendation and do that, and to avoid potentially dangerous areas.

I realize there's some debate about just the hazard of

9 the material, but the public is concerned about things radioactive and there is a potential for greater number of accidents to occur in the urban area. And I would encourage you to consider more rural routings.

That's all I have.

ELLIS: Thank you.

REINARD KNUTSEN

KNUTSEN: I'd like to thank the DOE for giving me this opportunity to speak my mind. I'm not sure if I totally feel like these public hearings actually -- if we are really represented in the decision-making. But at least it gives us a chance to see everybody and to see who supports what and who is against what. I don't have a prepared statement, but I will put that in before the March (sic) 3rd deadline. I would like to suggest that we do look

10 very closely at the option of discontinuing all operations at the Test Site and working specifically on cleaning up what is already happened -- occurred

11 there since 1951. And specifically look at the transportation, even -- regardless of whether Yucca Mountain goes in or not. Nevada is targeted as the

storage site of this nuclear waste. And the gentleman

12 earlier who talked about the transportation of nuclear waste through dangerous areas, this is a very big concern for me. And I think that this needs to be

13 looked at very closely. And the fact that you say that you leave it up to the shippers to decide which route they take, shows that there is no oversight or preparedness in terms of emergency response to an accident through an urban area. I read one DOE report that said that if an accident occurs in a rural area, 42 square miles could be contaminated, and it could take over a year to clean up and cost four point something billion dollars. But an accident in an urban area could take over four years to clean up and be ten times as expensive. And the report that I read

14 also said that the DOE expected -- and if we are transporting waste to Yucca Mountain, We would be looking at 15,000 shipments of nuclear waste. -- DOE expected at least 70 to 301 accidents to occur during that time period. And so these concerns weigh really heavily when thinking about the future of the Test Site.

I'd also like to say that I do

15 consider the Test Site to be Western Shoshone territory. And that I think all operations need to

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16 COOL

cease at the Test Site and that cleanup needs to occur. And that's the only operation that should continue is cleanup and restoration and returning the 17 lands to Western Shoshone sovereignty. Thank you.

ELLI: Thank you.

TOM MC GOWAN

MC GOWAN: Good evening. I apologize if I'm out of sequence. I understand so far, my perception is that we're primarily on the defensive. I say change that attitude immediately. There's no reason to be on the defensive. You are holding the aces. I speak to the people, whether they're with or beyond the agency in some aspect. I still call we the people of the United States. And it depends on what you want to do with the Test Site. It is your Test Site. Indians Incidentally have a policy longstanding. They don't own land, they are the stewards of land. That's why they can't sell it and won't sell it, probably. But they have every right to live on it and benefit from it. And I think I could support the person's -- the previous speaker's viewpoint to that extent, and convince some of my Native American sovereign tribal people to do the

same.

Your Test Site is not too big, it's not big enough. Your vision doesn't begin to scratch the surface of the attainable scope. You look -- some people look at it and see a vacant lot. Others look at it and see a potential income, some kind of a job. I look at it and I see the world headquarters for the age of transition from the toxic radioactive risk inherent nuclear age to the age of an abundance of safe, clean, inexpensive neo-energy to the third millennium profitable domestically, locally, nationally, trimally, and worldwide, intergenerationally. That's a little bit, but it's what we're made of and that's what we can do: and it's what we should be doing. And who would like to begin, and when? Because you can do it even as we speak. The key determinate is the decision-making process, which in my experience can take anywhere from a fraction of a microsecond to the rest of human time. We are already several million years late, might as well begin, don't you think? Well, here's what you can do with the Test Site. Practically anything. But I don't want to sound so general about it. Your first 18 key crucial and central activity should be the elimination of toxic radioactivity, completely and

18 COOL

permanently, and the explosion of it from the terrestrial, geophysical domain. There are other places in this universe besides this particular enlightened planet. And the way you eliminate it is what people are calling today triple-play. They're a little late and they picked out the wrong name, because triple-play means simultaneous, not sequential; or the other way around. Beg your pardon. Triple-play is simply the drastic reduction of the volume of toxic radioactivity. The transportation pursuant to elimination of all but the nominal volume of residual toxic byproducts, they're extremely toxic; but they're also short-lived. And we can get that down from this to this, and get this over here like that pretty easily. All you have to do is do it. You're Americans. I assume you're able to do it, but forgot a way now.

And that's the key central activity. All their activities that revolve around that and are expressly contingent and interrelatable to it. One is the nuclear weapons arsenal requisite ready-reserve storage and disposition. Somebody's calling that FM, fissile materials, and SSM. For some reason, they're not here because they think you're in some other activity. Severable somehow. I don't see

it severable. I see it as one big integer, just like this audience. We may not know each other's name, but you're all Americans and you all are concerned about this Test Site.

The other point to make, that you have environmental restoration, waste management, low-level mixed waste, TRU, and decline the state; which is out there ready to bury, try to recover process, compacted, and incinerated via biomass to create electricity. Incidentally, in the triple-play item, you've got the elimination of toxic radioactive radionuclides; and concurrent therewith, you have the production of tritium which can also be processed. You have also the generation of an abundance of electrical energy. You can take that and combine it competitively interfaced with solar, natural gas, hydrogen. Do you want to know what to do with the 19 tunnel? Put hydrogen in the tunnel, in case anybody's afraid of hydrogen.

But the point is, just don't sit here, do it. Don't talk to them, talk to each other. You are the people and you are the boss. Believe it or not, you are the President and the Congress of the United States. They are soldiers, good ones. And they will do what they're told. And it's up to you to

tell your Congress and your President what you want them to do. Not just for you, but for all humanity and all the environment for the rest of human time. That's about 4 1/2 to 5 billion years. Can you do that? I think you can. And I'm waiting.

JOE BACA

BACA: I would like to suggest one thing to DOE or the persons who are clearing these people for Q clearances from now on. When I was out there at the Nevada Test Site, like I told you before, there were people out there over Safety, alcoholics with Q clearances, you couldn't believe. You had managers drunk every day. And that's the truth. Thank you.

Jolie LONNER

LONNER: I just want to point out that as we give our names and we have our addresses on the card, this person is coming around taking photographs of everyone who is speaking, as well as having our testimony written down; and it makes me kind of nervous.

HENDERSON: Do you not want me to take

photographs?

LONNER: No, I don't.

HENDERSON: Okay.

(NO PHOTOGRAPHS WERE TAKEN AT THIS TIME)

LONNER: But just think about that when we think about the DOE and their new and friendly terms and how they've turned a new face, because I don't believe it. Speaking in public makes me nervous, so let me calm down here.

Just glancing over the EIS today, I realized that the DOE had a lot of greenwash, a lot of talk About Ecosystem Management. And I'm afraid that the DOE does not understand what Ecosystem Management means. When I learn about Ecosystem Management, I learn about how everything is interconnected. How when we do something to one planet, it may affect the soil. When we do something to the soil, it may affect the rain. When we do something to whatever, it may effect something out. And it may ripple out and ripple out and ripple out for many, many years to come. When the DOE talks about Ecosystem Management, and how that's what they're going to apply to the Nevada Test Site, it's crap. Because if they really believed in Ecosystem Management, they would err on the side of this could

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have an effect; because that's what people do when they think about the Ecosystem. They say this Ecosystem is way more complex than we can ever imagine, so we're going to err on the side that we don't know what we're talking about and try to figure out some other way. Because that's what people do when they understand how the earth works, because they understand that they can never understand how the earth works. If that makes any sense, but in my mind it does.

So I would just like to point out that the DOE keeps saying that they've turned a new face and they're being honest, but it's just PR; it's just crap. It's just greenwashing. It's not real. They don't know anything about Ecosystem Management. They don't understand how when they dump lots of radioactivity in the soil, it's going to affect the water, it's going to affect the soil microbes. It's going to affect the vegetation. We have no idea what it's going to do in 10,000 years. That's one of the comments that I have.

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I don't know if you want to reply to that first and then I can go on to my second one.

ELLE: One of the things I would invite you to do is participate with us in the Resource

Management Planning process that we have. One of the reasons that we issued Volume II of this EIS is to invite the public to help us define the content of the Resource Management Plan. And if you are concerned about whether or not we know what we're doing, then one way you can help us is to participate with us in the development of that activity. And your comments help us do that.

LONNER: I would just really question as to whether the DOE really wants anybody's input or they would just rather hire a PR for them to say, "Oh, yeah, Ecosystem Management, that's what you would say, that's what the '90's term is. Yeah, yeah, say that. They'll believe you and that will be great."

ELLE: Is Tim here? Did Tim leave?

KILLAM: (STOOD UP) Right here.

ELLE: Tim Killam is the DOE person that's managing this Resource Management Plan. If you talk to him and give him your name, he'll make sure that you get involved in the process, if you want to do that.

LONNER: Yeah, I would. My second comment: In the EIS, I was reading under the unavoidable adverse effects. And it says, quote: "Because of low groundwater velocities, migration of

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radionuclides to the nearest water will take about 750 years. The calculations indicate that tritium with a half-life of 12.5 years would decay to negligible levels long before reaching potential water." Now, right under that in the EIS, a few paragraphs in, it says: "Recent field studies revealed a higher probability for contamination migration than previously assumed." So my question is, how can we be sure that the newer undisclosed migration rates are not going to render the EIS inaccurate causing health hazards to the public?

22 cont.

ELLE: One of the ways we do that, is as we get new information and we look at the impact analysis that we've done in this document, if there is changes, if there are questions, then they would be raised again in another Environmental Impact Statement like this.

LONNER: Okay. It's just the same game. You have Beatty that has been leaking radiation. And the scientists knew about it and they said, "Oh, you know, this can't be right because the radiation is leaking way more than we ever assumed it would; so we must be wrong. Okay, we're going to wait a year and study it again." So they study it again, and a year later, boom, they realize, "Oh, well, we were right,

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sorry." You know? And now you have a whole huge disaster in Beatty. And now we're looking at the same thing saying we just -- you did your EIS with this information saying that radiation wouldn't leak, and now you have this new information that radiation leaks. So you're going to study it again while you're still dumping nuclear waste out there. It makes no sense. Studying it while it's still leaking is stupid. I mean, we can probably match back and forth, but I'm done.

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ELLE: Thank you very much.

DAVE TIMOTHY

TIMOTHY: I'm Dave Timothy. I'm one of the guinea pigs -- you wanted to qualify who we were. I'm one of the guinea pigs of the government's nuclear test program. I was drafted into the service, or maybe I should say I feel like I was drafted into the service, into the military at the age of 18 after being exposed repeatedly to low-level fallout for a number of years. By the time I was 18, I had thyroid cancer. If you'd like a better picture, I'll give you a good one with the government's records.

(INDICATING TO JIM HENDERSON HE OPENING HIS SHIRT)

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(LAUGHTER)

TIMOTHY: We found out that we cannot trust what the DOE says about the fallout. If you're familiar with the Tristate Congressional Hearings that went on in '79 and '80, they misrepresented the dosimeters or the amounts of fallouts in their own documents by a factor of 1,000. So we were receiving up to 1,000 times more radiation than what they were recording that we were getting. Dr. Robert Pendleton was the one who conducted those studies. That information is also in the court records that were taken and subpoenaed and deposition by the United States Attorney General. They took him and mine at the same time, so I know these facts to be true. The factor of 1,000 seems to come up quite consistently with the errors of the DOE.

My proposal and my question to the DOE at this time, is why are they not finishing the first test before they want to start doing new things? There has not been any effort made to find out what the effects are on low-level radiation or on people. There's one page in all those papers that talk about the effects on people, one page. There's probably 5,000 pages in that material. When do we get to tell the effects? Why isn't the DOE interested in the

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effects on people? So they really want to know? There's some of us here that can tell you the effects of radiation on people. There's some of us here that's had first-hand experience with how honest and how truthful the DOE has been. We have experienced it first-hand. And these flowery meetings don't cut it as far as us being able to tell what we need to, to the other people and to what's really going on. I don't believe that we even have scratched the surface on what their intent is at that Test Site. And as you are probably aware, there's been vast amounts of storage placed there already. This was kept from us until just recently.

24 cont.

I think the Test Site should be closed permanent and cleaned up. We don't need any more potential hazards than we've already had. We live here. We can't just drive away and not have exposure to these materials. It's about time that we, the people, were heard. Did you not tell me personally that you would contact me within a week with the information that I requested, Don?

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ELLE: Yes, I did.

TIMOTHY: Did you contact me within the week?

ELLE: I asked somebody to go that for

me, yes.

TIMOTHY: You said you would. I asked if you would personally, did I not?

ELLE: Yes.

TIMOTHY: Did you?

ELLE: I have not done that, no.

TIMOTHY: Okay. There's a classic example. We asked for information, it doesn't come. Now, if you believe that these proposals are what's going to happen, think again, it won't. They're going to do whatever they've decided unless we stop them. And we're going to have to unite. We're going to have to do as the gentleman previous to me stated, we're going to have to get to our congressmen, senators. And we've got to be vocal. This has got to get to our friends and neighbors and into the media or we'll never get this stopped. They have already decided to

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use this for a waste disposal site for the whole nation. If you're familiar with what's going on up in Twills or Dougway, have you heard the news on that lately at their site there? They have massive illnesses, cancers. The government says there are this many. (Indicating) The people have done their surveys and they found out that there's this many. (Indicating) The same discrepancies seem to follow

through in about the same proportions. I think a factor of 1,000 comes pretty close.

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We, the people, want that Site closed permanent. No more storage, no more dispersant of any types of material there. We feel very strongly about this. Some of us feel like that it's our survival, our lives that's at stake here. So far, we've had no effort to find out what the effects are. I propose that we do some more study on what the effects on the people are, real studies. Not DOE studies, real honest studies. Number two, let's get some serious medical interest in here to find out what the long-term effects of this radiation are. Third, let's get some decent compensation and disability to those that have been damaged by this. This imaginary fence around the Test Site, that the fallout and the radiation doesn't go passed, is bunk. It's not so.

Please, if you want to survive this mess that's being set up and created, do something or they'll do it, they'll run over us. And they will eventually destroy us if we allow them. Thank you.

RICK NIELSEN

NIELSEN: Thank you. I have some concerns, some of the similar concerns that were already mentioned. And maybe you could elaborate a

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little more; specifically, on the time frames and the integration of decisions being made in other EISs and the impacts that they'll have at the Test Site. For

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example, I think one of the decisions pending in another EIS is the possible storage of plutonium at the Test Site. Is that decision going to be made

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prior to the Final Record of Decision for the Nevada Test Site or would that come afterwards, or how are those decisions integrated?

ELLE: I believe in terms of that decision-making process, our EIS will be done before that decision is made. If in fact a decision is made to place plutonium for long-term storage at the Test Site, then there would be another EIS or a NEPA document written to support that decision. So the programmatic decision may be made. There will be another public process to fully assess the impacts of that activity.

NIELSEN: Well, given some of the public discussion about the mishandling of the waste Management PEIS and the fact that this is being -- the Nevada Test Site is being done internally, I just

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wonder what type of integration in these decisions -- is it really going to take place?

ELLE: Well, one of the things I tried to point out is that we have made a significant effort trying to be consistent with other documents as they've been developed. To the extent that we have an alternative in our document that would include storage of plutonium, the same alternative that's in the Material Disposition Document; we are consistent.

NIELSEN: Another question I have along the same lines, is in regards to the decisions for the Nevada Test Site Site-wide EIS specifically. In the Resource Management Plan, it lists a chart here that shows that the Record of Decision will be made and then after that's made, then the commitment to complete the Resource Management Plan and complete the Transportation Plan will be done after you've made the decisions and select the alternatives and propose

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projects. It would seem to me that it would make more sense to complete the Resource Management Plan and have the goals established for your Resource Management Plan before you go ahead and make selections for your proposed activities.

ELLE: I think the process we have established in the sense of having a framework for a

Resource Management Plan with a proposed set of goals and asking the public to help us define better the full content of that document, allows us to engage in resource management planning in a realistic way. It is not, at least in our expectation, possible to finish that plan in the short time left before we finish the EIS. But it will be a committed process that we undertake.

33 NIELSEN: Can I ask you why you're in such a hurry to finish the EIS?

ELLE: As I tried to say before, the Secretary's objective in having these documents written and produced and finished is 15 months. Her objective is both in terms of getting realistic information out to the public in a rapid way, as much as to save money. Because the longer we take to do this, the more it costs to get it done.

NIELSEN: Okay. I had one more question with regards to the Resource Management Plan. You make specific reference to soliciting outside input and public input into the plan. And specifically, you mentioned the Community Reuse Organization. And correct me if I'm wrong, but I think they are now called the Nevada Test Site Development Corporation. And I think they're operating under a grant from the

DOE. I'm wondering if it's appropriate for a private

34 organization being funded by the DOE to be solicited for comments to make recommendations to establish resource management goals at the Nevada Test Site?

ELLE: Well, we've also asked the state of Nevada to help us in this plan and we've asked the public, so there is a broad spectrum.

NIELSEN: Are they operating on a grant from the DOE?

ELLE: The state?

NIELSEN: Yes.

ELLE: No.

NIELSEN: Okay. Well, I would recommend

35 that any private venture, or public private partnership which proposes the use of the NTS as an operating site, be opened to further review under NEPA for environmental impacts and allow for sufficient public input. Thank you.

BILL FLANGAS

FLANGAS: My name is Bill Flangas and I'm here to make a couple of comments in support of continuing the activity for the Nevada Test Site. I've been to a great number of these meetings and we

tend to repeat and repeat, you know, many of the same concerns and much of the same dialogue. So I think sometimes it's important to kind of point out what are the real needs and what are the real problems. Now, in terms of that, you know, this 1,360-square-mile Test Site serves as this nation's outdoor laboratory. And every great nation needs an outdoor laboratory in pursuit of its national security. The Test Site has admirably done that for a great number of years.

The Cold War was a fearful effort on the part of the Soviets to gain nuclear supremacy. And in that process, they literally raped three generations of their people. And ultimately, they lost. And thank God, that Cold War basically is over. Most of us hope and pray that the need for full-scale testing will never again to arrive. And I respectfully suggest that the best way to prevent full-scale resumption of nuclear testing is to maintain a readiness capability that would serve as a deterrence to anybody whoever wants to embark on a venture like that again. In my lifetime, we have fought four wars in this country. And we've lost three places. And the last one is still kind of shaky. And that bothers me.

The Test Site is uniquely suited

to serve as a nation's outdoor laboratory. And again, you've heard this before, but I think we need to remind ourselves, the Nevada Test Site is not crossed by any major rivers. It does not have any big canyons and whatnot that prevent large-scale projects. It's not crossed by any transcontinental highways or transcontinental railroads. It has a benign year-round climate that enables year-round activity and major projects. It has a superbly skilled work force that has served this nation well. It has a work force that is dedicated to public safety, personal safety, have become highly conditioned to the environmental needs, has imposed a discipline to

36 accomplish that. I respectfully suggest that that skilled work force that was so successful in bringing the Cold War to an end, it's absolutely the best work force now to deal with the remaining problems.

Now, we're here collectively to solve problems, not aggravate them. We have a great opportunity in our hands right now to go to future uses for the Test Site, in terms of dealing with big national problems that can't be resolved any place else. If you tried to create another Test Site in this country today, there are very few places left. There are some places in Montana. I guess there are

some places in Western Colorado. There's a few areas in New Mexico and whatnot. But none of them has the superior qualities the Nevada Test Site has, with its national security, with its deep water table, the fact it's not on the -- it has not been encroached by population and so on.

I urge -- you know, in these meetings, we all have our agendas and we all have our viewpoints. And I respectfully urge everyone here to exercise common courtesy, respect for other people's opinions. And dedicate each and every one of us to meeting our mutual responsibilities. Thank you.

WILLIAM VASCONI

VASCONI: Jim Henderson, if you want to take my picture, feel free to do so. Jim does not work for DOE, by the way. I have been around Jim for approximately the last 2 1/2 years. He's on the NTS Site specific Advisory Board; better known as CAB, Community Advisory Board. That involves some 30 people that are well diversified within the community of Southern Nevada. And we meet once a month, the first Wednesday. We air our views. We go through and discuss issues. We broke an EIS down into

four parts. And naturally, we kind of drift towards the ones we like. Jim has been a member of that committee, like I say, for 2 1/2 years and I appreciate his efforts. Again, he does not work for DOE.

DOE, AEC, now we all know that they did have a place in our lives. The older you get, the more you realize they probably did -- not getting off into the wars and all. But the work that was done out there did secure our future for our younger people, regardless of what you think. Now, folks, there was 928 devices exploded out there. Some of them above the surface, the vast majority of them underground. You're going to be hardpressed to convince an old country boy like me that you're going to go out there and plant corn in ten years. It's not going to happen. But there can be cosmetic cleanup. You keep the areas secured. At the present time, you've got a number of individuals and organizations that want to come on board and utilize the futures that exist at the Nevada Test Site.

Yes, we are the NTS Development Corporation made up of a good many businessmen here in Southern Nevada that want to bring in new technologies, offer businesses an opportunity to

produce things out of the ordinary. Well, I think it's time we let them in. We've got a lot of kids graduating from college in this town. As far as technologies, they've got to go to another state. Now, believe me, we've produced all the people we need to change sheets in hotels or be bartenders in casinos. What you need to do is make it possible for the young people graduating from UNLV and Reno to come down here and get involved with these businesses and new technologies. Come down and get a piece of the action. There's nothing wrong with the diversified economy of Southern Nevada.

Now, we can stand here and bad-rap DOE, but name another country where the people get to sit and talk and find their faults with what they're doing. Hell, was it so long ago that you thought that Russia was going to collapse in any number of countries? It wasn't that long ago where I thought they could close the front gate of the Test Site and do any damn thing they wanted to.

I started working out there in 1964. I worked off and on out there probably some 17, 18 years. I've been a construction worker 32. That Test Site paid for a lot of college educations, built a lot of houses. It meant a lot to Nye County and

some of the other communities that you don't hear about. Those people would like to see the diversified economy of Southern Nevada. They'd like to get involved with those technologies. You ought to give them the chance. Now, this valley has grown from some 85,000, when I first got here, to a million. They say in 14 more years, there's going to be two million people here. Well, maybe we ought to give it back to Arizona or Northern California or Southern California or something, because it's damn sure Northern LA.

Now, these folks are telling you they don't want that waste to come through Las Vegas, 37 they don't want it to come through Nye County. I agree. By God, we got -- we can go right there to Carlin, come on down Carlin and toward the Smoky Valley. Put your rail system dead center, geographical center of Nevada and go on to that Test Site. 38 When you folks get done using it, we can use it for mining. We can use it for cattle. We can use it for recreation. But long after you get that Test Site taken care of, we may have a system that may last hundreds of years.

Well, that's just about all I had to say, except I want you folks in DOE to know that people like me appreciate the fact that we're doing

something about the waste. We are involved in environmental restoration. You're giving us an opportunity to express our views. And I appreciate it. Thank you.

ELLE: Thank you.

ALLAN CHAMBERLAIN

CHAMBERLAIN: I'm Allan Chamberlain. I'm a geologist up in Lincoln County. I don't have any great sweeping statements to make other than just right to the document itself. I just want to make a short comment. And there's a lot of comments I'd like to make. I spent a few hours last night reading it and it was a lot of fun to read, especially the geologic parts of this, since I am a geologist. But those of you who have your document, if you want to open it up to Volume 1, chapter 4 on Page 4-97, Line 16 and 17. It says the Nevada Test Site is

39 probably the geologically best known large area within the United States. That's really an absurd statement. The best known geologic area? And I've never had the opportunity to go out there and look at the rocks and all the geologic community.

A question I have is, you know,

will we ever have an opportunity to go out and look at that? Will it be opened up to the geologic community

40 so we can go out and look at those outcrops and verify some of the geology; can we do that? That's a question I have.

ELLE: If you want a tour of the Test Site, we can arrange that at any time. And I think in geological siting, when we had a meeting here in Las Vegas, did spend some time at the Test Site.

CHAMBERLAIN: What about going out and studying and measuring sections and taking samples of the outcrops and things like that? Is that going to be opened up to the general geologic community?

ELLE: As far as I know, some of that information is available in published documents. And we can probably put you in contact with some geologists to help you answer that question.

CHAMBERLAIN: Okay. But I'd like to go verify it myself. Having worked just north of the Test Site, I find that 95 percent of the public documents are wrong. But I'd like to go out there and verify some of the geology. So anyway, that's just a comment I'd like to add to it. Or take the statement

41 out, it's not the geologically best known area, it's just not. So thank you.

LARRY KRENZIEN

KRENZIEN: Larry Krenzien. I believe that the Alternatives 3 and 4 cannot be considered at this time. The Congressional moratorium of September '92 and extended by President Clinton directed the DOE to maintain their capability to resume nuclear

42 testing, if required. Even if the Zero Yield Comprehensive Test Ban Treaty is signed in the future, the safeguards that the United States would insist upon in the CTBT, would require that the Nevada Test Site be available for testing. Alternatives 3 and 4 would completely do away with the infrastructure required to conduct the underground nuclear tests.

FRED DEXTER

DEXTER: I have a statement from the Sierra Club. My name is Fred Dexter. Some of our findings to this point include a strong encouragement to the DOE to emphasize a comprehensive environmental

43 cleanup of the Test Site. This should be a broad base cleanup not limited to the nuclear hot spots, such as Areas 3 and 5; but rigorously include chemical

43 cont. pollution such as the PCBs, and Section 3 and any other hazards. This is a huge task and we believe that new environmental cleanup technologies will resolve from this massive effort. The proper environmental restoration of the Nevada Test Site will employ many workers and will itself qualify as a new industry at the Test Site.

The Sierra Club supports the siting of the Solar Enterprise Zone at the Test Site proper and any other nonnuclear industrial activities which will not create further environmental degradation. The greater the economic activity at the Test Site, the greater will be the impetus for a thorough cleanup of the site. The Sierra Club will be submitting a final written opinion of this Draft EIS before the May 3rd deadline. However, at this point,

44 we strongly feel that a second revised Draft EIS for the Test Site is needed that will address the many concerns of the general public, both in Nevada and in Utah that have arisen based on the content of this first Draft EIS. Also, plans for the interim storage

45 of nuclear waste, such as the Site U.S. Senate is currently considering, and not addressed in this Draft EIS.

The Sierra Club specifically

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objects to this Draft Environmental Impact Statement for the Nevada Test Site for the following reasons: Although, one of the most important objection, the inclusion of Coyote Spring Valley, Eldorado Valley, and Dry Lake Valley in this Draft EIS, is inappropriate. The inclusion for consideration in this Draft EIS of land not within the Test Site serves only to confuse the purpose of this document. Furthermore, the DOE does not even have jurisdiction over these unrelated parcels. Of the four alternatives, the DOE has not clearly indicated in this Draft EIS which of the four alternatives is closest to the final plan I would like to have implemented. As this final decision will be made by the DOE, the Sierra Club would like the DOE to be much more forthcoming in informing the general public of what it really wants. A March 5th, 1996 Las Vegas Sun article covering the DOE public meeting in St. George, Utah, reported that Mr. Ellis -- and I quote from the Sun: "I acknowledge that the DOE is reluctant to consider outright closure." The Sierra Club does not recommend outright closure, but the DOE is obviously already discounting one of its four alternatives. If this is true, what is the DOE's actual preference? These very important departmental policies should be

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48 cont. clearly evident in the Draft EIS. And the mission thereof renders this document incomplete, hollow, and misleading.

We object to the fast-track approach which the DOE is taking to speed this Draft Environmental Impact Statement to a final version without a more meaningful public opinion input on any proposed revisions before the issuance of a Record of Decision for the Test Site. Just because Secretary O'Leary has directed that this Draft EIS be completed in about 15 months does not mean that this is an adequate amount of time to complete the necessary public two-way dialogues on an issue of this importance. The Sierra Club would like to see the issuance of a second revised Draft Environmental Impact Statement for the Nevada Test Site which will address fully the concerns and criticisms brought to the attention of the DOE through the series of public meetings. And we would like the DOE to present a much clearer statement of the actual DOE preferred alternative use for the Site.

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Thank you.

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MICHAEL DEFLORIA

DEFLORIA: I want to make one little statement about the labor unions. We do not want to keep that Test Site open just to make work. NAFTA and GATT -- the labor unions stood back and watched NAFTA and GATT move all our factories overseas using taxpayer's money. You understand that? And just today, I heard that labor unions are going to give Clinton 35 more million dollars for his campaign contributions, which means to say we want four more years of corruption. The United States federal government is claiming that 86 percent of Nevada land belongs to the U.S. government. Several other Western states in Alaska also have been victimized by the U.S. government. The U.S. government also tried to claim the Alaska oil deposits. If they would have, the people in Alaska would not be getting the $1,000-a-year bonus from the oil profits. The former present governors and Nevada politicians could care less who owns the land. All they seem to worry about is how much their pension is going to be. The obelisk could care less. Judges and lawyers don't care. In fact, nobody cares except the American Indians. So who does this land belong to, which is made up of

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parts of Western states? Who does it really belong to?

The following information was taken from a newsletter several years ago. The purpose of the newsletter was to outline the current status of the ongoing dialogue and negotiations between the Western Shoshone Nations and the United States government. The Western Shoshone National Council is committed and dedicated to the preservation of ancestral lands, culture and traditions. There has always been a Western Shoshone Council for the Western Shoshone Nations. From facts available today, this council dates back to the time immortal. The United States recognizes Shoshone title to this ancestral land at Ruby Valley in 1863 when they solemnly signed a Treaty of Peace and Friendship known as this Treaty of Ruby Valley. This treaty has never been modified or abrogated. It still stands as a form of domestic and international law just like other treaties of the United States and other nations. What began as an act of Western Shoshone goodwill to facilitate travel to California, is being perverted by the federal government to swindle the Western Shoshone people out of their land and therefore their livelihood.

The government's legal

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manipulations over the years have been complicity and confusing. The most shameless attempt to defraud the Western Shoshone people occurred in 1979 when the government tried to pay the Western Shoshone 26 million dollars for just 15 cents per acre for land that has never been for sale. This one says, "Transaction proves without a shadow of a doubt that the Treaty of 1863 was and still is a legal document." But the government claiming to be a trustee put the money into a government account and called it transaction completed. And Jack Anderson wrote in the Washington Post 18 April 1984, "The government argued somewhat absurdly that just by its offer of payment, it became the owner of Shoshone land, and thus the Indians were trespassing." This Godfather theory of real estate making an offer that can't be refused should strike fear in the hearts of every homeowner in the United States.

The U.S. taxpayers that help our Uncle Sam generously gave the state of Israel taxpayer's money, 84 billion dollar taxpayer's money for free since 1948; plus domestic and other foreign aid, to help Israel take back the land that they claim was theirs 5,000 years ago. Shouldn't the American Indians get equal treatment and be compensated for all

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the pain and suffering?

Now, this is from a book by Russell Means (ph), a native American Indian. You will not see, read, or hear about this in the history books anywhere in the United States. On a knoll overlooking the Missouri River is a 14-foot square gray stone pillar reads: "To commemorate the Treaty between the United States of America and the ancient tribe of the Suerau (ph) Dakota Indians concluded at Washington DC April the 19th, 1858, ratified by the Senate February 16, 1859." The real story: Several Indian leaders were taken to Washington DC and kept in their hotel rooms for months, in-house arrest; penniless, homeless and confused by whiskey and grand promises. They ceded millions of acres of ancestral hunting ground to the U.S. Reserve reserving only 430,000 acres for themselves and descends. The Suerau to be paid 1.6 million during 50 years. Instead of cash, the government supplied them with food, clothing, farm equipment, livestock, and other necessities. The Indian population decreased slowly but payments in equipment. They would later be slaughtered like the 400 million buffalo, dozens of small epidemics reduced by the President's agents after they distributed blankets infected with the

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smallpox virus or hundreds starved or froze to death because the agents had stolen their treaty goods. About two years after the 1858 Treaty, a Dr. Walter Berley (ph), a U.S. agent, was caught stealing many supplies set in payment of that year's annuity.

Boarding school for Indians were havens for pedophelieus (sic). Generations of boys and girls of sadistic, sexual, violations for perverts. Many of them were priests and nuns. If the children complained, they were whipped for making trouble. In the 1970s, this was still going on. The most notorious Indian boarding school was the Intermountain School near Provo, Utah, run by the Mormon church. Hundreds of Indians died trying to escape to the mountains. The church remained silent on this subject. Today, in practice, the U.S. Bill of Rights does not apply to reservation Indians. They are not free to bear arms, not free to practice their religion. Unemployment is 80 percent. Are American Indians getting equal affirmative action benefits?

The Eisenhower Administration Plan was to depopulate the Indian population in 1960 and 1960, and integrate Indians into urban. And then the government could take the rest of the Indian's land so no one else could be left to object. The Eisenhower's

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Progress knows that the termination had grown out of the Bureau of Indian Affairs Policy from the Truman years: a plan dreamed up by Devere (ph) Hennesyer (ph), the man who had run FDR's concentration camps to rid American Indians; the camps for American citizens of Japanese ancestry during World War II. This was designed to rid the American Indian nations by buying up Indian land for a lump sum paid at 1950 prices. Tribal councils often were nothing more than extensions of Bureau of Indian Affairs, rubber stamps, or policies created in Washington. Over 60 Indian nations had been terminated and was no longer recognized as a sovereign nation. Life expectancy is very low for Indians.

Teddy Roosevelt believed that Indian savages should have been exterminated because they had no right to land that they didn't know how to use properly. He represented the deep tone of manifest destiny, the doctrine popularized by Jefferson. It claimed, in essence, that God had intended all North American Indians for European men. The truth about Thanksgiving. After a colonial militia had returned from murdering men, how they slaughtered them. And that's how they celebrated Thanksgiving, they'd slaughter the Indians, then they

had a party.

My offer of $5,000 cash is still available if any government agency solves the problem. The way I look at it, the government employees who draws checks reminds me of Hitler's Gestapo. You know you're doing wrong. You know the country is in bad shape. It's up to you to straighten it out. Every man, woman, town, city, state must get involved and solve their own problems. Our federal government won't or can't solve problems, simple problems.

ELLE: Thank you for your comment.

PAUL MC GINNIS

MC GINNIS: Good evening. My name is Paul McGinnis. I'm a researcher. I do a lot of work with government documents. And what I'm going to talk about tonight are the things that I'm aware of that have been omitted from the Draft EIS. Some of the items I'm going to talk about have been the subject of a Freedom of Information Act case that the DOE has not responded to yet. What I'm basically going to talk about is some things that, I don't know, maybe it's for reasons of national security they can't tell you. They mentioned tonight that there is a classified

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appendix to the DEIS. I mean, it's counterproductive to say we're going to tell the public everything that could effect their safety and then have a classified appendix where vital information is concealed.

52 cont.

Another project that the DOE studied, and I know that the Air Force has studied, that is not in the Draft EIS. And I don't know the current status of it. There is a program operated under the code name of Timberwind (ph). It later became known as the Space Nuclear Thermal Propulsion Program. In this program, they were going to conduct nuclear rocket testing at Area 26 of the Nevada Test Site, near Saddle Mountain. And if you want to consider safety hazards, consider a chemical rocket explosion like that of the space shuttle challenger or the titan missiles, except with a nuclear reactor on board.

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Another thing that they mentioned in the Draft EIS, but they don't give you any further details on, they mentioned the plutonium contamination in Area 13 of the Nellis Air Force Range Complex. The military knows show that this box here, R4808E on the Air Force map, is actually part of the secret Air Force Base in Groom Lake; the so-called Area 51. The Department of Defense has stated that this box here,

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this air space is under the control of the Nevada Operations Office. Even though it's an Air Force Base, it's on the Nellis Range.

I have some documents tonight I'm going to pass out. I have extra copies based on my work. But some of the files that have been released from the AEC days, clearly show the connection between the Department of Energy's predecessor and that base. For example, I have a copy of a 1957 press release from the Atomic Energy Commission that states that a Nevada Test Site installation known as Watertown Strip, which was the original name for this place, has an air field; and it's to the northeast of the Test Site and it is at Groom Lake. Another document that I have uncovered is this one here. This is a telex that clearly states that base, Watertown Strip, which was completed in 1956, and is a Nevada Test Site installation. This kind of thing still goes on. If you look at the military maps, you can see that the Department of Energy supplies electrical power to the base. Also, they provide road access on Valley Road and on Mercury Highway. And like I said before, there is plutonium contamination in Area 13. It's just I don't understand why they can't say that it's part of Groom Lake.

So anyways, I have mentioned -- I'm trying to uncover some more things through the Freedom of Information Act. I just don't feel that when the DOE conceals relevant information like that, that they're really making a good faith effort at this EIS. And like I say, I've got copies of material with the document references in case anybody needs it.

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ELLE: Thank you. Paul, could you leave us a copy also for the record.

DAVID RUBY

RUBY: My name is David Ruby, and I'm with the Nevada Desert Experience. For 15 years, we've been offering faith-based protest out at the Nevada Test Site trying to end nuclear weapons testing forever. There's several things I'd like to talk about this evening. I think what we try to do is plumb the depths of the spirit. We try to plumb the depths of morality. Not that we're experts in it, but that's kind of our work and our effort. I think that for our concern is the earth. Our concern is the native peoples who were here before we were and to try to do what's right. And so the concern for the Western Shoshone was raised. We've learned from our

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actions out at the Test Site over the years of the Western Shoshone and their Ruby Valley Treaty of 1863. We believe that that needs to be honored and respected. And so for whatever option is -- whatever course of the four options is set out upon, we would hope it would include the Western Shoshone.

Of the four actions, we believe in discontinuing all operations. We feel that there's a lot of work that does need to be done in cleaning up nuclear waste, but one of the first things to do is stop making more of it. There's enough work right now just to clean up the nuclear waste. I know that the Department of Energy is involved with creating energy for our country in a variety of ways. And we would like to see a cessation of nuclear energy immediately. We would like to see our best minds of our country put at the task instead of creating more nuclear energy, or design a new type of nuclear weapons like the experiments that are going to be conducted, the subcritical tests in the coming year. And I'd like to see those tests stopped.

But we would hope that our country's best minds will be put to use for solar energy, for wind energy, energy that is environmentally friendly. We believe that our country

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has a capability of really being a truly great country, but there's many things in our actions that I think raise questions for us. We have the potential, I think, we have the minds in our country, we have the ability in our country to export solar energy around the world; to allow peoples around the world who have no access to electric energy. Try to develop ways, high technology ways that could be exported around the world, so that people who are out in outlying areas in Australia, and other parts of the world that have no access to electricity, could get it from the sun. Perhaps the Nuclear Test Site in Nevada here can be used for that. 56

I have spoken with Chairman -- I'm sorry, I can't think of his name of the Western Shoshone. I'm sorry, his name escapes me right now. I asked him about his opinion -- Chief Raymond Yowl (ph). I have spoken with him. I asked his opinion about solar energy being developed at the Nevada Test Site. And he feels that there's a possibility there. That in conjunction using the expertise of the Department of Energy, perhaps in conjunction with the people of the Western Shoshone, to try to create more solar power there on the Test Site. They may not necessarily be opposed to that.

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But we would like to see a cleanup of the Nevada Test Site beginning immediately, a cessation of any more creation of nuclear waste. And we would like to see 57 employment -- setting our best minds and talents to that task.

Sometimes we need to think -- kind of get ourselves out of the mold of what's possible and think beyond -- to dream a little bit about what could be. And I'll just say right now one example that comes to my mind, while I've been sitting here listening to people, is right now above us in space; the reality is, there's a spacecraft with American and Russian astronauts circling the globe together. And I think it's a very good -- that's the kind of symbolism that we need, the kind of thinking of what's possible in the future. Can we envision a world without nuclear energy? Can we envision a world without nuclear weapons? Can we envision a world that we include everybody? Can we envision the world where we respect other people and their various opinions and not resort to nuclear weapons? Let's try to find ways to eliminate the nuclear weapons. Let's not be conducting -- let's not be taking stands like with the 58 subcritical tests that can jeopardize international agreements right now. We're close to having a

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Comprehensive Test Ban Treaty. But many nonnuclear states are questioning our motives when we're trying to develop other tests that could possibly create more technologies for nuclear weapons.

We should be getting rid of the whole idea of relying on nuclear weapons. We should be using our best minds right now to find out ways to get rid of them. And we should be taking the lead on that in the worldwide community. And then we will truly be a great nation if we can help create a world where nuclear weapons are outlawed and their use is made unthinkable. So we would hope for a 59 discontinuation of operations at the Test Site. We 60 hope for promotion of solar energy in conjunction with 61 the Western Shoshone. We would like to see the land turned over to the Western Shoshone. We would like to 62 see the Nevada Test Site cleaned up beginning immediately.

Thank you.

ELLE: Thank you.

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ROBERT TITUS

TITUS: My name is Robert Titus. Dr. Ells, I thought we were here to discuss the EIS for the Nevada Test Site. Most of the comments I've heard have been on either Yucca Mountain or Area 51. Mr. Flangas and Mr. Krenzien have really stolen my thunder, so my comments will be quite short. But in consideration of the four alternatives, prime consideration should be given to keeping Yucca Flats and Areas 19 and 20 up on the mesas, as are irreplaceable resource to start conducting nuclear weapons tests again if we ever have to. We live in a dangerous world and we don't know what it's going to be 5, 10, 15 years down the road. And you can't replace the Nevada Test Site anywhere else in the U.S.

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ELLE: Thank you.

VIC SKAAR

SKAAR: Good evening, ladies and gentlemen. My name is Vic Skaar. I did not intend to speak when I came in here this evening but I have to. I absolutely have to. Because I have something to tell you that is not emotional, it is based on

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personal experience. And I've listened to some garbage out there that is really nonscientific garbage.

And I want to share with you a couple of things. I spent 27 years in the United States Air Force. For most of those years, for about 20 or 30 years, the Strategic Air Command flew around the world with these weapons that were tested out there in those aircrafts. And on the 17th of January of 1966, during a routine exercise over the Southern Spain, a B-52 and 135 collided. That night, I was out there with a bunch of other people to clean up that mess. Four of those weapons, those thermal nuclear weapons, four of them fell from 30,000 feet. One of them landed intact without no scars on it at all. Two of them landed in the HE, the high explosive, and exploded upon impact and broke the fission material and released that. That went downwind. That's called Plutonium 239. I ate that stuff. I drank that stuff. I breathed that stuff for 81 days. I was tested for follow-up urinalysis. For 11 months after I left that site, I urinated plutonium. Thirty years ago, folks, and I'm alive. Scientifically, I guess I should be dead because I heard some of you say that this is the most deadly known substance known to man.

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For you, sir, I respect the fact that you have had some problems. I lost a dear buddy of mine that spent the same amount of time there with me; night and day we were on that site. His cancer, however, was not related, not related to his exposure to plutonium. Now, why am I telling you this? If it hadn't been for the folks out there at the Test Site and what that has meant to the nation, those weapons would not have been able to fall from 30,000 feet and fall safe.

Fifty-four weeks in January of 1967, another B-52 with the similar 4 HE bombs crossed in Thule, Greenland. Those four weapons likewise went into the drink and never exploded no fissionable release. Doesn't that mean something? Why are we picking on the Test Site that served its purpose. There is a need for that technology to continue. I get upset when I hear we're spending billions of dollars trying to clean up something that has no -- pardon me, "no" is not a right word. -- has suspect health-related problems. There isn't enough science out there to say that something is going to kill you unless you're exposed to it. Zero exposure still equals zero risk. I'm a public health supervisor at this day in my life. I'm happy to be employed. I

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understand a little bit of what I was exposed to. And I'm darn glad that I was there, because the folks that were there did a darn good job of cleaning up that part of Spain. And I've got to tell you something, that's not a desolate area out there today. That's a community of about 380 or 400 people. Now, I haven't seen it for 30 years; I do hope to go back some day. And they're still living in that area, folks. There's a heck of a lot more radiation plutonium specifically that we left behind in Spain than you'll find out here at any spot in that Test Site. And those people live there every day; raise their vegetables, and are to my knowledge, still doing all right.

Well, I guess I am finished. I do appreciate the opportunity. I sat here and said I've got a message to share and I'm going to share it. I'm going to share it as often as I can. Thank you.

ELLE: Thank you.

CHRIS BROWN

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BROWN: Hi, my name is Chris Brown. I'm representing the Campaign for Nevada's Future. The campaign was organized of local folks who are concerned about attempts by the Department of Energy

and the federal government to continue to use Nevada as the dumping ground for the nation's nuclear waste. Your Alternative 3 is one more example of that and so we're opposed to Alternative 3, the way it's written. 64 cont.

We also feel that some of the examples that are going on around the country, like in Fernald, they're showing that through waste minimization, you can do a lot better job at cleaning up and keeping the waste on site. And the Test Site should accelerate its own programs for environmental restoration. In fact, we would suggest an Alternative 5 that isn't in the document, which would basically take the solar site and continue that as part of Alternative 5; accelerate the environmental restoration activities as part of Alternative 5. And then take what land has not been contaminated and turn it back to the Western Shoshone. And those should be the three elements of Alternative 5. The expanded-use activities to continue the effects and the pursuit of the Cold War are really not necessary. And we feel that it's important that in the expanded-use alternative where the continual development of new nuclear weapons is advocated through various means through the subcriticals, as you call them, or hydrodynamic tests; that the risks from increased 65 66 67

partners, if you will, in the area race, as we will surely recruit by pursuing such a path, should be included in this document. That that is a risk and it's a very real risk to everyone. In fact, the risk of a nuclear war will be increased by pursuing the paths that are explored in Alternative 3. And that that risk should be included in the document. 67 cont. 68

In addition, just one comment about the document; nice purple cover. But the numbers in it constantly go back and forth from metric to English system. And you even use that wonderful measurement of the hectare. Who the heck knows what area it covers. But it would be great if you would be consistent, or at each place where you have a measurement, give us both measurements. So that those who are familiar with the English system can follow that, and those who are familiar with the metric can follow that. But this changing back and forth just makes for an unnecessarily confusing document. 69

Thank you.

ELLE: Thank you.

JOHANNA HOLLY

HOLLY: I'm Johanna Holly and I represent Campaign for Nevada Future and also myself as just a citizen here. I don't understand a lot of this lingo and really don't even want to -- care to even learn about it, because it's -- to me, it's such the masculine in its negative form. It wants to play with its little toys and always have a gun. And you go through this town how it's changed dramatically and I see everybody building up higher walls, gated communities. Get the weapons. You know, everybody has their private little weapon because it's a dangerous community. And the DOE is constantly working on these things where we have all these things because of -- you know, we've got to protect ourselves from -- I think we need to protect ourselves from ourselves. That's where we're having problems, because we're totally poisoning ourselves. We're poisoning our nation, our plants, our animals, our people. And thank God, you're alive, but I sure as hell don't want a lot of plutonium so that I can wee-wee it out of my body every day. I think it's a sad thing when you say something like that.

I feel like it's very, very

important for us to learn to talk, talk to people and not have a gun in front of them and say we can talk with them. Because you can't talk with a gun. And just a small example is I do racewalking in the park in the morning. And it's kind of a so-called bad section and there's a lot of gang members there. And they were coming on to a lot of the people and giving them a lot of fear. And when they came toward me, they were coming pretty strong. And I decided to do the opposite of what they wanted me to do. And so I approached them in a really friendly way and I told them that they could learn -- they were teasing me about my racewalking because it looks kind of funny. And so I said, "Well, you know, I know you're razzing me, but you can do it. And if you -- because you have a good stroke and everything." And so I showed them how to do it and I became very friendly to them. And now in the park instead of harassing me, they say "There's our friend." It's just the simple little thing.

If we start to talk to people and start to work things out instead of putting all this -- you call this talking but you've already made your minds up. But you have to have an many of these forums so that it looks legit. But I hope you really 70

70 cont. do listen to us because it's real important. We all need to love each other. I know it sounds funny for these rednecks to hear, country boys.

(LAUGHTER)

ELLE: But you can do an awful lot by just touching.

BOB YENTEMA

YENTEMA: My name is Bob Yentema. I'm a retired Test Site employee. I just wanted to say a word for the people who are still out there. I think they've been a little bit neglected, especially in the 71 EIS. I noticed the socioeconomic impact there didn't really address how it would affect the people who would be most affected by this. It's very easy to make them the whipping boy for real or imagined sins that have happened in the past or to say, well, let's just shut the Test Site down or return it to the people who may or may not have a legal claim to it. It's easy to say that when it's not your mortgage payment, it's not your kid's braces that have to be paid for. And these are people just like you. They're just exactly the same, the same likes and desires and all this. And I just wanted to say a word

on their behalf. I hope they'll be considered when this decision is made.

ELLE: Thank you.

JULIE LOSNER

LOSNER: My understanding is that the Test Site employs about as many people as Treasure Island does. We're not talking about a great percentage of the people in Las Vegas who are going to lose jobs. And that was something I wanted to clear up.

YENTEMA: But it's important to them.

LOSNER: It is very important to them but it was also very important to, let's say, the 88 people to have jobs, too. It was very important to many people who made weapons for war. It was very important for people who made DDT. But DDT is very dangerous and people don't make it anymore because it killed people and things and animals and the environment. But what I wanted to say, was to address the other man who said he was going to talk about science as opposed to the crap that he was hearing. Science talking about how bombs were falling out of the sky and they were exploding and radiation was

leaking, and I'm really glad that he didn't get sick. But the fact that bombs are exploding and that radiation is leaking, does not make me feel any safer; the fact that this man was able to live. But I'm sure other people were incredibly endangered by it.

And the fact that we've had all these accidents is even more reason to be scared, is even more reason to realize that the DOE and the people who have handled nuclear bombs and nuclear radiation have not known what they were doing. They've put on a persona of being safe and knowing what they were doing. But in reality, they didn't. They didn't plan for those accidents. Those accidents happened. And when they happened, they were like, oh, no, I guess we better do something about it. And I have a feeling that the DOE is still doing that. And it doesn't make me feel safer to hear that someone ate plutonium and that they were okay. That's pretty scary to me.

Thank you.

TOM MC GOWAN

MC GOWAN: Tom McGowan. This is my second time around. Just to comment on the previous closing statement. If they ingested plutonium, they may be okay in the instance that they had no intestinal blockage of any kind. Otherwise, they would be quite dead within three minutes, and that would typically be the case. To follow to Page 7 of my initial presentation. I'm just rounding it out. As I asserted, there is a broad range of activities possible and advisable for the Test Site; both nuclear and nonnuclear characterization. I mean by that official slash civilian context; dual aspect. There is indeed a potential for an entire community, dedicated intentional community to be constructed and operated, administered right there at the Test Site with an outreach to a megagreater community throughout all of Southern Nevada and conceivably beyond, well-beyond.

I would indicate that we are in the threshold of a new era. This is not the final chapter. It's Page 1 of an on-going multivolume work in progress. Nuclear is not the problem, you and nature is the problem. We are quality deficient

adversed to ourselves and everything around us. Perhaps of human, spiritual, quality divisions, that would be at the espirality (ph) reason, integrity, responsible; and above all, conscience. And when we get to the point where we decide to change for the better, all of this will change for the better just like that. But first, you have to decide. And that can take a fraction of a microsecond or the rest of human time. And if you've decided, we can begin. But you must first decide. The rest of it is nuts and bolts routine, quite simply stated. Not difficult at all. You must first decide what it is you want to do and then go ahead and do it.

And incidentally, to the good soldiers, which is what they are, they don't formulate public policy. They carry out instructions handed down to them mandatorily directed by the Congress of the United States who we elect. If there's any fault-finding, it begins with us. We continue to elect people who are quite incompetent and act on the basis of political expediency and give these fellows orders to do things that are quite impossible, scientifically and technologically, absolutely impossible; and also unconscionable. They have no choice except to do it or give up eating. And I think

so far, they haven't given up eating just yet, have you? But in my view, you should. My view, you should tell the Congress, "Hey, look, guys, this is all wrong." So you're not going to do it, we have to do it. And when do you want to begin? Once again, make up your mind. What do you want to do? They're not going to do it for you. They can't. You have to do it. You decide you do it, the rest is history; and we change this world for the better. We've got one chance only. This is the last generation. We may be the generation that killed all mankind. Think about it.

TROY JONES

JONES: I know that you mentioned before that the HR-1020 really has nothing to do with this. Although, in this EIS Executive Summary that I was reading, one of the current NTS missions was to provide the capability to respond to nuclear emergencies. And as such, I ask you, you know, a cask
72 going 70 miles an hour down the road traveling full of nuclear waste, and these casks are hopefully able to withstand 30 miles an hour impacts. They just raised the speed limit to 70 miles an hour. What exactly are

72 cont. you prepared to do when that impacts? You know, that's one question certainly.

The other question that I have, I'm hearing these four options of how to clean this up and get it environmentally safe again and go forward with the Nevada Test Site. But the other thing that I was reading is that you've asked for a 244-million-dollar budget increase for the testing and whatnot, the experiments that you're doing; while cutting the environmental spending, an additional
73 205 million? And so, you know, just those figures, which are of course your request, lead me to believe that there's something fishy about this. That doesn't really make sense, that you're saying you want to clean things up but you want to cut spending on cleaning it up. Are you going to do it without money? You haven't even got the answer. And if you don't have the money, you don't have a chance. So these are two questions that I'd be interested in hearing on.

ELLE: Well, to answer the first question, the Department plays a large role in emergency response to radionuclides or radioactive kinds of accidents. And that is one of the missions that this office has. And we support the state and local agencies and emergency response programs in

responding to accidents like that.

JONES: In what way? Details.

ELLE: Well, I can give you people to talk to about that, if you want to. But I can't answer the question.

JONES: Uh-huh.

ELLE: And the second question, I'm not sure which budget numbers you're talking about. If it's the OMB's Submission to Congress for the '97 budget, I think part of that plan is we can do cleanups better and cheaper than we had originally planned. And the trade-off and lower costs on environmental restoration is based on that, I think.

JONES: Is there any place in particular that you know of that has been contaminated with nuclear waste that has now been cleaned up cheaply or otherwise?

ELLE: We've cleaned up several sites on the Nevada Test Site. Other DOE facilities across the country have also cleaned up specific sites. And we can get you that information if you're interested in it.

JONES: What are the standards for that
74 cleanup? Cleanup being I could go plant my garden there and raise my two children there, or that I won't

74 | die the minute I step onto the earth?
COMM.

ELLE: In some cases, cleaned up to a level where you could release it for public access. In other cases, because we're going to be there for a while longer, not clean it up quite that much.

JONES: I would be interested in that information. I think that not only I, but the public at large should have access to that information. I am doubtful that it's forthcoming.

ELLE: Okay. Well, as I tried to say at the beginning, we are interested in your comments. There are a lot of places you can get at us in terms of giving us comments or asking questions. I encourage you to do that. And we'll pay attention to the comments as we get them. And I thank you very much for coming tonight. We appreciate your attendance and your participation. Thank you.

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PUBLIC HEARING TRANSCRIPT 5

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

**PROGRAMMATIC ENVIRONMENTAL
IMPACT STATEMENT
PUBLIC MEETING**

(PUBLIC COMMENTS)

Held at the

SANDS EXPOSITION AND CONVENTION CENTER
201 East Sands
Las Vegas, Nevada 89109

on

March 28, 1996
Beginning at
6:00 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

KEY to Transcript symbols and/or Abbreviations

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PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

PUBLIC MEETING AGENDA

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TOM MC GOWAN.....4

SALLY DEVLIN.....6

LAS VEGAS, NEVADA, MARCH 28, 1999, 6:02 P.M.

TOM MC GOWAN

MC GOWAN: Just a few salient points.

1 Number One: The underground storage and/or disposition of nuclear pertinent materials of any kind is not an option; either at Yucca Mountain, NTS, anywhere nationally, or anywhere throughout the terrestrial domain. Point Number one.

2 Point number two: Aboveground storage is a viable alternative for certain specific purposes only; and only as altered redundancy ensured, safe, secure, monitored, retrievable, and containment integrity, quality-effective, and solely pursuant to the final disposition via elimination. I should say reduction transelimination. And is further pursuant to final disposition via expulsion, completely, permanently, and irretrievably from the terrestrial domain.

3 Point number three: These missions respectively combined for fissile material, storage and disposition, and nuclear weapons of arsenal stockpile stewardship management, need to be clearly defined. We are not engaged in simply a

cost-reduction-based contraction and consolidation of a nuclear weapons complex. This is not a small or giant, this is a dwarf. It's an entirely unique serpent (ph) and distinct essence and requires thereto a coincident addressed and response paradigm. A totally unique historically unprecedented approach is required. So far, you don't have one. You're treating it like a contracted, or what you refer to as consolidated version, of a traditional antecedent regime. It is no such thing. And if you continue in that arbitrary and expedient mode, you are ensured failure-inherent and time and quality and cost-ineffective. In other words, net cost profit-

It is essential that the Department securely recognize the profound difference between a downsized antecedent regime and a neoregime, which I just referred to. The final point to make is just simplified; don't store it, don't preserve and perpetuate it, eliminate it. There's more but I can't just bring it up just like that. So I'll come back at a more appropriate time and complete my remarks. I appreciate everything you're doing, whatever it is you do. Okay? And I appreciate it even more so, if the punctuation and the grammar and everything is in the right place when I finally read it in that book. I'll

6

tell you why I say that -- and it's not this young lady, she's doing a great job. Some other highly trained person who works for the Department in the past, put in a phrase attributed to me called "nuclear edge." What I had said was "nuclear age." I would anticipate that anybody who works in this regime automatically would have somewhat of an idea that I was probably saying "nuclear age," not "nuclear edge." It sounds like a razor blade. Thank you very much.

SALLY DEVLIN

DEVLIN: How to interpret the EIS on NTS. Do the 43 states and our Nevada that will be involved in these enormous transport problems realize how the government feels and has demonstrated that they are graciously willing to destroy our quality of life? This could occur as soon as 1997 or 1998, if this is allowed to go through. 4

Would proper science make sense out of this problem? No colloidal studies or microbiological conversion studies, even though they have been suggested, have been made. Why don't we transmute and destroy the LLW and LLMW? This process for destruction and transmutation was discovered and 5

7

developed by the National Laboratories. It is ready for Commercialization.

Three railroad plans, that would cost billions of dollars, were proposed by DOE when I became interested in the transportation studies. One of these studies would have come through Pahrump. The EIS weighs many pounds, but in all those pounds of paper there are many maps. None of these show Pahrump until one burrows into Volume I, Appendix I in the three pound Transportation Study. And there, on pages 3-18, 3-20, 3-22 are maps using 160 to transport waste through Pahrump. 6

The federal government is totally unaware of our demographics. We are an unincorporated town with unknown boundaries because we have never been properly surveyed. Our area encompasses the approximate size of 5 northeastern states. Our County Commissioners have allocated 48,000 parcels ranging in size from single parcels to 100 acres in this enormous area. The 20,000 residents today could, over the next decade, become the third most populated town in Nevada with 100,000 people. We have one of the largest and purest aquifers in the entire nation. 7 8

Highway 160, which goes through Pahrump, parallels 95 which goes to NTS. If an 9

8

accident occurred on 95, the only way for the HAZMAT trained firefighters from Las Vegas to get to it is through Pahrump. From I-15 in Las Vegas, Clark County, and the Blue Diamond cutoff over Mountain Springs at about 5,600 feet, and then another 46 miles to the Nye County line and 6 more miles to Pahrump. From there, it is 36 miles more to 160 and 8 miles down the road on 95, and 8 miles to the entrance of NTS at Mercury, all in Nye County. We have a few paid firemen, but our 43 volunteers take approximately ten hours of HAZMAT training and are updated ten hours yearly. Our sheriffs get 16 hours of HAZMAT training and are updated eight hours yearly. 9 cont

Our two-lane Highway 160 is congested by traffic going back and forth to Las Vegas. Hazardous materials such as propane, gasoline, liquid cyanide, liquid nitrogen, are going through Pahrump all the time. Yet, on pages 3-38 through 40 of the Transportation EIS, the bar graph H.V.6 is among the highest for every fatality risk from traffic fatalities to radiation-induced cancer risks, and by far, the highest on the hazardous index risk. The risk of bringing the wastes through Pahrump are slightly lower, but not by much. If an accident happened on 95, the only access to it would be going

9

over the hump and through the middle of Pahrump on 160. What will this hazardous stream of trucks do to the huge economic engine of Las Vegas? 10

Alternate 3 in the summary states that all radioactive waste will come to NTS and that there are 900,000 cubic yards of LLW and LLMW. Yet, in the Transportation on Page 3-14, it states that 1,154,963 cubic yards would be coming through by truck with a potential of 24,276,796 cubic yards over the next 75 years. 11

There are 55 million gallons of highly radioactive waste stored in 177 underground tanks in Hanford, Washington. If the plutonium and uranium were to go critical, what would happen? This mess has been going on for 50 years and the federal government has been characterizing it for 10. We, the taxpayers, might have to pay 36 billion dollars for the cleanup. 12

We know about the radioactive spill which occurred at Los Alamos. It ended up at Cochiti Lake and polluted the fish with radioactive colloides.

NTS presently stores 1,100 55-gallon drums of transuranic waste. If there is no MIPP, will NTS get another 5,000 or more 55-gallon 13

drums of TRW in '98?

Adding together the recently declassified DoD report on their 312 metric tons of HLW to the other 30,000 metric tons or 126,000 metric tons of nuclear power waste, and what do you get? Not one, but two repositories at Yucca Mountain. Cost 60 billion dollars. But again, if there is no repository, then it will all go to NTS?

We would be the world's largest MRS with no oversight compensation since the federal government owns 93 percent of Nye County. My home is 30 miles from the Test Site and 90 miles from Yucca Mountain. We are the third largest county in the USA.

My concerns are for our town and for the nation as a whole. Forty-four states are involved in transporting this waste. Does the county want the effects of this radiobiological exposure to destroy our future generations? Toxic waste in our drinking water from the landfills is causing sterility in all animals including us. This contamination is also causing birth defects and high incidents of cancer in all age groups. Our local plants and trees are suffering extra growth from the radioactivity splattered from the Nevada Test Site.

The nation as a whole must put a

stop to our government contaminating our air, water, and land. The poisons from NTS will ruin the pristine Pahrump Valley and Nye County.

For those interested in the environmental aspects of this enormous EIS, let me leave you with this thought. Forty-three states generate radioactive waste. Nevada does not generate any. If these deadly radioactive materials are put in our desert, there will be one desert tortoise that will survive after we are gone. Will the only creature left on our planet be the indestructible cockroach who has eaten our last tortoise?

Will you join with me to get this scientific transmutation process implemented?

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WORKSHOP NOTES 1

Nevada Test Site (NTS) Transportation Advisory Group
Protocol Working Group

Recommended Action Items to be Included by the U.S. Department of Energy in the Record of Decision Regarding the Nevada Test Site Environmental Impact Statement

11 April 1996

Introduction

These recommendations are the result of a series of discussions (by telephone conference and in person) among members of the Protocol Working Group, a subcommittee of the NTS Advisory Group (a.k.a., the Big Group). Representatives of the DOE/Nevada Operations Office were present at all such discussions and are already cognizant of the proposed action items presented in this document.

These recommendations do not reflect the official positions of any local government, participating group or individual. They are being put forth to (1) help the participants see the areas of most concern to Protocol Working Group members and (2) assist staff of governmental and private agencies prepare comments on the *Draft Environmental Impact Statement for the Nevada Test and Off-Site Locations in the State of Nevada (EIS)*. With this information, reviewers may incorporate specific recommendations into their own comments, or indicate where they disagree. This will assist DOE/NV in understanding the importance of each recommendation to each individual commenter. In addition, we feel that DOE's perception of the importance of any recommendation will be enhanced by repetition of that recommendation in individual comment submissions. It is important to note that these recommendations may become part of the official record of the *EIS only* when they are submitted as comments.

Protocol Working Group members expect DOE/NV to evaluate each of these recommendations explicitly in the EIS. Further, we would like any recommendation that is accepted by DOE/NV to be addressed in the Record of Decision as a specific, rather than a planned or to-be-developed, mitigation measure.

For the reader's convenience, the following recommended action items are grouped into three major areas, including *(1) institutional interaction/communication, (2) mitigation, and (3) route selection and selection of parking areas. The mitigation* group is further subdivided into subareas of *communication, equipment, planning and training, and procedures and operations.* No consensus was reached regarding route selection, with some persons opting for the specification of certain routes, others calling for the development of a route-selection methodology, and still others suggesting compromise measures. Therefore, the section on routing and parking area selection contains a brief summary of the discussions rather than specific recommendations.

WORKSHOP NOTES 1 (CONTINUED)

RECOMMENDATIONS REGARDING THE NTS EIS TO BE CONSIDERED BY THE TRANSPORTATION PROTOCOL WORKING GROUP

11 April 1996

GROUP I. RECOMMENDATIONS REGARDING INSTITUTIONAL INTERACTION/COMMUNICATION DURING PLANNING AND OPERATIONS

1. DOE must specify shipment notification procedures, including [1] state, tribal and local jurisdiction notification, [2] estimates of materials and volumes to be shipped, and, [3] designations of points of contact for corridor jurisdictions.

2. There should be regular meetings among representatives of DOE, corridor jurisdictions and other stakeholders and interested entities. These meetings should be used to:

   a. provide updates regarding ongoing and planned shipment campaigns and reports and evaluations on past shipments (based on DOE monitoring programs);
   b. address issues that may arise when significant changes have occurred or are planned for the transportation system and in materials and/or volumes being shipped;
   c. identify and mitigate additional impacts or concerns of local communities should transportation problems occur.

Interim information can be made available through postings to an Internet home page, or through other electronic, hard copy or oral communication. In addition, DOE should also provide:

1. a mechanism for receiving and addressing concerns that may arise between regular meetings; and,
2. annual reports to include, at the minimum, identification of carriers, sources and destinations of each shipment, the number and volume of shipments of each substance, highway and rail routes used, accidents/accident encountered and actions taken to address them, and evaluations of each shipment campaign.

GROUP II. RECOMMENDATIONS REGARDING MITIGATION

Communication

1. DOE must ensure that local emergency response agencies are able to identify low level waste shipments and provide immediate notification to federal and state agencies responsible for responding to or supporting the handling of accidents.

Equipment

1. DOE/NV should provide responding jurisdictions/agencies with at least two new detection instruments per jurisdiction and ongoing calibration services in conjunction with local training in corridor communities in emergency response to incidents involving radioactive materials.
2. DOE/NV should provide or facilitate the provision of in-vehicle radio repeaters, binoculars, cellular telephones and other equipment to corridor jurisdictions.
3. DOE should provide preference to local public safety and emergency response agencies for the free distribution of federal surplus emergency response equipment.

WORKSHOP NOTES 1 (CONTINUED)

Recommended DOE Transportation Action Items Regarding the NTS EIS, 11 April 1996, p. 3

GROUP II. RECOMMENDATIONS REGARDING MITIGATION (continued)

Planning and Training

1. DOE/NV should work with corridor communities to make training opportunities as effective as possible. Considerations should be given to direct funding of training programs to the corridor communities, providing training opportunities on weekends to accommodate volunteer responders, and providing stipends to participants. [See, also, Item 1 under Equipment].
2. Communities which are not directly located on transportation routes should be provided the opportunity to participate in emergency response training courses offered to corridor communities.
3. DOE should provide financial and technical assistance as necessary to ensure that corridor communities have up-to-date emergency management and evacuation plans in place.

Procedures and Operations

1. Transported loads should be covered or contained to prevent possible aerosol dispersement.
2. All shipments of [illegible] level waste arriving at NTS during off-hours should be [illegible] temporarily park loads at a secured area inside NTS gates.
3. Each truck carrying Class 7 materials should have two drivers present at all times.
4. Carriers should respond to all driver advisories and notifications of delays and make appropriate adjustments to primary routes.
5. All vehicles should be required to undergo quarterly CVSA inspections [based on enhanced North American standard] and should display appropriate safety inspection stickers.

GROUP III. RECOMMENDATIONS REGARDING ROUTE SELECTION AND SELECTION OF PARKING AREAS

Members of the group were unable to reach consensus on recommended action items regarding transportation. However, there were a number of discussions that brought out three definite positions. These were:

1. ***DOE should select specific primary routes***, usually interstates, U.S. and state highways, and direct carriers to use these routes through contracts or other means. Any exception to their use would occur when drivers may make adjustments to routes based upon official advisories and notifications of delays [See Group II, Mitigation, Procedures and Operations, Item 4].

2. ***DOE should avoid the use of certain routes, segments of routes and shipping at specific times.*** In this case, DOE/NV and affected parties would agree on routes and segments of routes that cannot be used for LLW shipments. It was also suggested that DOE institute policies to avoid transporting materials during holidays, peak tourist travel periods, or during special events. Examples of areas to avoid are Hoover Dam and the Spaghetti Bowl. Carriers would be prohibited by contract or other means from using certain routes or route segments or shipping at certain times.

WORKSHOP NOTES 1 (CONTINUED)

Recommended DOE Transportation Action Items Regarding the NTS EIS, 11 April 1996, p. 3

GROUP III. RECOMMENDATIONS REGARDING ROUTE SELECTION AND SELECTION OF PARKING AREAS (continued)

3. ***DOE and stakeholders should agree on a methodology for route selection.*** Under this option, DOE must commit in the *Record of Decision* to a clearly articulated process for routing of LLW shipments and to a mechanism that binds the shipper to adhering to the identified routing alternative. Two members suggested specific language for a recommendation on route selection methodology and direction to carriers.

   This suggested language and other discussion brought out the point that DOE and stakeholders should enter into a process to establish methodologies for selecting the safest and most acceptable routes. Some working group members recommended that U.S. DOT guidelines for routing of hazardous and radioactive materials be used to provide direction in this effort. Within this context, it was also suggested that DOE should provide state and local jurisdictions with copies of the route and risk analyses for each carrier transporting Class 7 materials as defined in 49 CFR 172.403.

4. As a compromise between Options 2 and 3, above, some working group representatives thought that option 2 might be put into effect and used until a methodology is agreed upon.

Parking Areas

1. DOE/NV should work with the State and corridor jurisdictions to develop criteria for selection of safe parking areas to be used by carrier vehicles. This is related to the recommendation in *Group II, Mitigation, Procedures and Operations*, that all shipments of low level waste arriving at NTS during off-hours be required to temporarily park loads at a secured area inside NTS gates.

WORKSHOP NOTES 2

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
C.O.R.E WORKSHOP
(PUBLIC COMMENTS)

Held at the

CITY HALL BUILDING
Boulder City, Nevada

on

April 8, 1996
Beginning at
7:30 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

WORKSHOP NOTES 2 (CONTINUED)

KEY to Transcript Symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "Verbatim -- in the exact words; word for word."

Dash: [--] Indicates a sentence not completed by speaker.

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Bechtel Nevada
Reporting Services

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT

C.O.N.E WORKSHOP AGENDA

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PUBLIC COMMENT PERIOD - LIST OF SPEAKERS
IRIS BLETSCH.....4
DENNY HAAS.....5
BOBBI YOUNGBLOOD.....6

BOULDER CITY, NEVADA, APRIL 8, 1996, 7:30 P.M.

PUBLIC COMMENTS

IRIS BLETSCH

BLETSCH: I have visited with Dr. Elle before. I attended one of the first scoping meetings and I had lengthy comments then. I have also sent people to meetings to put the comments in. Tonight, I'm not going to repeat those same comments. I'm sure you don't want to hear them again. I just had two questions. I would just like to know, and I think probably the people would like to know, what this process has cost in dollars up 'til now, and what you assume it might cost by the time we're finished?

ELLE: I think the budget we've been working on in the last couple of years has been about 4 or 5 million dollars a year. Our end expectations is about 10 million dollars.

BLETSCH: I got a copy of your big one. I couldn't lift it, much less read it. (Laughter)

ELLE: Well, I should comment, in comparison to other documents that DOE has produced like this, Idaho had a document that cost probably

about 50 million. Some of the other big documents cost 20 or 30 million. So on a relative scale, though the 10 million sounds expensive, it is pretty cost-effective; at least the way we've tried to do this one.

BLETSCH: Okay. My other question is: I was looking at these alternatives we have over here. (Indicating) And I'd like to discontinue the use of transportation by requesting that all the states that generate whatever it is they generate, they just keep it there. If it's so safe, that shouldn't be a problem. 2

ELLE: Okay.

BLETSCH: That's it.

DENNY HAAS

HAAS: I would like to request that the DOE investigate, through the Bureau of Reclamation, whether or not hazardous truck traffic can be prohibited from using Hoover Dam to cross the Colorado River. 3

ELLE: Thank you.

BOBBI YOUNGBLOOD

YOUNGBLOOD: I really came to learn. And, of course, I am very much interested that we not use any truck route through Boulder City with hazardous waste. And more recently, in the newspaper, I read where they're picketing perhaps for underground testing. That concerns me. And with young children, with the water level, and all these other concerns. Again, I don't feel qualified to speak though, because I did come late, and I didn't get to hear the presentation or the beginning of it. But I'm here as a concerned citizen and want to become involved, just for the safety of our children and our grandchildren. Thank you. 4

ELLE: Thank you. Again, I just want to thank everybody for coming and thank you for the opportunity to come and talk about the project that we've been working on for quite awhile. I think it has importance, not only today, but into the future of the Test Site and how we use this resource that we value in terms of its national capability. Thank you for your participation. And we will listen to your comments and incorporate them in our work. Thank you.

BENSON: Professor Richitt.

WORKSHOP NOTES 2 (CONTINUED)

RICHITT: I just want to, again, thank you personally for coming in this evening and for participating. We'll be here for a little longer. So Bobbi, if you would like to ask questions or whatever, stay here as long as you'd like; and that's an invitation to everyone also. We want you to be involved in the process and we want you to be a part of this; to tell DOE what you want and what you think. If any of you have not turned in your survey forms, we would really appreciate getting them back. They will help us to better do more in the future. So thank you again very much.

* * * * * *

WORKSHOP NOTES 3

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

BIG GROUP MEETING
(PUBLIC COMMENTS)

HELD IN

Building C-1 Auditorium
2621 Losee Road
North Las Vegas, NV 89030

on

April 11, 1996
Beginning at
2:30 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

KEY to Transcript Symbols and/or Abbreviations

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BIG GROUP MEETING AGENDA

Page

PUBLIC COMMENT PERIOD - LIST OF SPEAKERS

THERON GOYNES.....4

DENNIS BECHTEL.....9

LAS VEGAS, NEVADA, APRIL 11, 1996, 2:30 P.M.

PUBLIC COMMENTS

THERON GOYNES

GOYNES: Good afternoon. I'm Theron Goynes, Councilman and Mayor Pro Temp for the City of North Las Vegas. And as I was talking to my coworkers or cohorts, or what have you -- I just left a Regional Transportation Commission Meeting, and I'm about up to here with acronyms today. RTC, EOB, NWACE, WESP, NDOT, and DOE, and Department of Transportation, and you name it. And I've got to get through with this and go prepare for a Planning Commission Meeting and the City Council this evening in North Las Vegas. So pardon me if I sound a little bit irrational, because my RTC Meeting, Regional Transportation Commission, deals with transportation and fixed routes, and what are we going to do with I-15 and the Spaghetti Bowl at I-95. But I want you to know that I'm not asking for your sympathy, I'm just asking for your understanding. The acronyms, I'm going to get a complete list of these before the end of my term.

But again, I want to express my concerns from the City of North Las Vegas. And certainly, I would offer my thanks to the Department of Energy at this time for the opportunity to comment on the Nevada Test Site Environmental Impact Statement. I would also like to express my appreciation on behalf of City of North Las Vegas staff for the opportunity to work with DOE staff; especially Frank Di Sanza and Kathleen Grassmeier, over the past several months through the Protocol Working Group, to discuss the transportation issues. Now, that was well put together by Nancy, wasn't it?

(LAUGHTER)

GOYNES: Okay. I would like to express my concerns today on the following points: Number one: The area covered by the EIS did not extend into North Las Vegas. And I believe that we were one of the first entities that became very, very concerned about the extenuating circumstances that was coming from the DOE area. Given that this area is the source of many of the workers and the focal points for most of the transportation alternatives, more analysis should have been done on the region.

Number two: The City has always maintained that their first responsibility is to

WORKSHOP NOTES 3 (CONTINUED)

provide the highest level of safety for our residents, workers, and drivers. In this respect, we feel it is important to coordinate the Test Site activities with the Yucca Mountain Project, since there is a strong possibility that high-level and low-level nuclear waste will use the same transportation corridors. 2

The City has, on several occasions, expressed to DOE their opposition to transporting any nuclear waste on Craig Road, and our position has not changed. A hazards assessment of Craig Road and the Union Pacific Railroad was completed in 1995 by Russell Di Bartolo, Ph.D., funded by the State of Nevada Waste Projects Office grant, which compares development for one mile either side of Craig Road in 1989 to development in 1995. This study confirms the City's position that the Craig Road area residential development makes it unsuitable as a nuclear waste transportation route. 3 4

Although it is not required under current DOT regulations, DOE should become proactive in route selection. I think that was displayed a moment ago on one of the graphs. It should be possible to develop a route selection methodology based on a comparative analysis that takes into account our local concerns and conditions, including 5 6

WORKSHOP NOTES 3 (CONTINUED)

population, potential risk for accidents, and various other criteria. Again, I noticed some of that displayed in the documents that we were focused on a moment ago. The present process of considering mainly time and distance is not adequate. The proposed use of HIGHWAY -- and that's capitalized -- while it might be good for macro scale planning, it is inadequate at the local level. Low-level waste transport is too closely allied with high-level waste transport to be dismissed until the Yucca Mountain EIS is completed. Any routes used for low-level waste transportation will assuredly be used for high-level waste. 6 cont. 7 8

The economy of the Las Vegas Valley depends upon perceptions. The valley's primary industry and Nevada's primary source of income is tourism. That, we all know, and you don't have to wonder about that. The DOE may have an excellent record in transporting nuclear waste, but a negative perception caused by such shipments could result in economic damage to the entire state of Nevada. Route selection methodology must be explicit, transferable to both high-level and low-level nuclear waste transportation and account for local concerns and conditions. 9 10

In the event of an incident

involving nuclear waste materials, the DOE must be ready to respond quickly and appropriately. To this end, the EIS should include a recommendation to 11 maintain RAT team readiness at the Nevada Test Site. I believe that's Radiation Assistance Team. I recall some years ago during my tenure on the Council, I attended a workshop in Emmitsburg, Maryland involving the event that would take place. And we went through one of the action item plans on the event that something of this nature would take place. And I thought -- is there anybody here familiar with that process in Emmitsburg, Maryland?

GRASSMEIER: It's the National Fire Academy.

GOYNES: Right. It's the old college that they turned into that.

GRASSMEIER: It used to be St. Joseph College, and I am a graduate of that school.

GOYNES: Okay, then we're on the same wavelength.

Regular meetings should be scheduled with DOE, Carriers, and Affected Units of 12 Government to discuss nuclear waste transportation issues.

Notification to local governments 13

13 cont. should be provided by DOE indicating number of shipments, type, route, time of day and days of week. Again, we refer back to the slides that we saw.

The City of North Las Vegas will comment in writing regarding the entire Nevada Test Site Environmental Impact Statement by the May deadline. And I can assure you that we will be held to this commitment before the May deadline.

And it's been my pleasure. And again, I would like to thank you for the opportunity to provide comments on the Environmental Impact Statement transportation issues. And please note that we are an incremental part of the program and we're going to stay -- and being one of the first, we thank DOE, the Department of Energy, again, for allowing us to be part of it. Thank you.

ELLE: Thank you very much.

DENNIS BECHTEL

BECHTEL: My name is Dennis Bechtel. The comments I would like to offer today are from Commissioner Myrna Williams, the Commissioner of Clark County. She regretted that she would be unable to be here today, she had another meeting. So I'm going to

convey her thoughts. First, she also wanted to thank the Department of Energy, individuals from the Transportation Protocol Working Group; and the Department of Energy, Katie and Frank for all your hard work. This has been unique in our experience. Transportation is a big issue to Clark County. And to see this as part of the EIS, I think it's kind of unique. And I also, with Bart, would like to see -- we'll be interested to see what really comes out of the exercise. But I think the dialogue of the work by DOE and a number of meetings, and I think some sensitivity of our concerns, is appreciated.

What I'd like to do is to read some comments from Commissioner Williams. We also will be providing some more detailed comments by the May 3rd deadline. She says: The issue of transporting radioactive waste through the Las Vegas Valley is an extreme concern to Clark County and citizens. Our involvement on this issue reflects our concern for the creation of potential precedence for future Yucca Mountain nuclear waste shipments. The resolution of issues such as the routing of the waste notably in urbanized areas will require considerable additional time and effort in working with local governments. From Clark County's perspective, the

Final EIS and the Record of Decision should state unequivocally that further interactions are required 14 of the affected communities on transportation issues such as routing.

To kind of echo some of the discussions of the Protocol Working Group. DOE should 15 utilize the methodology of route selection that will minimize risks to the public; not just in Las Vegas, but anywhere. The risk analysis presented in the study does not adequately consider potential local problem areas. While traditionally time and distance have been the key selection criteria of the transport of the waste, given the fact that a number of 16 shipments may be increased dramatically through this program, other factors such as population density, areas of high potential accidents, location of sensitive facilities should be equally important determinates in route selection. As a side comment, the concerns that we express today are things that DOE are going to be faced with throughout the country, not just us. We're the focal point right now.

Ms. Williams finds it interesting that most of the routes examined in the Transportation Study travels through Clark County or the Las Vegas Valley. And I think there's a little bit of history

WORKSHOP NOTES 3 (CONTINUED)

involved in that. The Las Vegas Valley currently is a population that exceeds one million. It is estimated that the population could go to almost two million by the year 2005, the estimated period of the Transportation Study. Given the continuing dramatic growth and population and traffic congestion and construction, it is difficult to understand why potentially dangerous areas such as Hoover Dam and so-called Spaghetti Bowl, which is the I-15, US-95 intersection, are being considered for routing. It is also hard to believe that roads such as Craig Road and Rancho, the rapid urbanization and residential development occurring in the north and northwest sections of Las Vegas Valley, are also considered as viable routes. These locations offer high accident potential. US-93 and Hoover Dam is experiencing gridlock and these are the dangerous switchbacks on both sides of the Arizona, Nevada sides. The Spaghetti Bowl will be under new construction over the next five or ten years, as you're aware. This creates additional traffic hazards and potential for accidents.

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It is always noted that there are thousands of shipments and other types of hazardous materials of waste on the roads today; this being

WORKSHOP NOTES 3 (CONTINUED)

radioactive, but it's no different and no more dangerous. We're obviously concerned about all types of material transported, given that it presents hazards to the public. A tourist-based economy such as ours must be sensitive to anything that would enhance potential risk to the public or induce the public's desire to visit our area. What would be the public's reaction, for example, if there were an accident with radioactive material at the Spaghetti Bowl, considering that the major transportation routes being considered through Las Vegas are adjacent to our most densely placed casinos and hotels? Wouldn't it be more prudent to avoid this in populated areas?

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DOE, as we understand it, has taken a more passive role in the past with respect to radioactive waste shipments, essentially recommending that the carriers adhere to DOT regulations and relying on the carriers for compliance. We feel that because the NTS is being considered for the extremely large number of shipments for radioactive material, DOE needs to take a more proactive role in issues such as route selection. DOE can, for example, mandate by contract, or at least exploring, on routing the options for carriers; including perhaps the avoidance of sensitive areas that was noted earlier, and

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WORKSHOP NOTES 3 (CONTINUED)

22 cont. consideration such as safe-havens and others.

Because of the potential for large

23 numbers of shipments, it is important to the local communities and particularly public safety personnel be notified about shipments in their timing. At a minimum, this will provide the local public safety personnel with the opportunity to prepare for the shipments. It will enable local DOE officials to be guided -- to guide carriers about potential problems that may occur. I keep thinking that -- about a month or two ago, there was an accident. I think it was a beverage truck leaving Las Vegas on I-15 going south. That coincides with the time where everybody is going back to Los Angeles. And it was a gridlock for many miles, believe me. And it would just take something like that to happen. Under our current traffic conditions, it would really create a chaotic situation.

In addition to routing, local

24 communities should also be actively involved in discussing issues such as how carriers would handle the deviation from the established routes for fueling, rest, mail stops, emergency breakdowns, and similar. These are also important issues that would cause a -- let me just -- you know, someone traveling a highway

WORKSHOP NOTES 3 (CONTINUED)

needs to do these things. And we've had situations in the past where the deviations have occurred where a truck parked at Fremont Street, because someone had not been to Las Vegas and decided that he needed to visit the area and get a meal. And it turned out the truck was actually leaking material at the time. And I'm sure there's probably other instances of that, that we don't even know about.

Finally, all facets of emergency response and public safety are also important. And availability of adequate emergency response resources and having sufficiently trained personnel are important. And notably, those areas could rely upon the volunteered fire departments. In our case, Indian Springs is like that. And, of course, the other rural counties, many of them are all volunteered. Likewise, DOE must be prepared to resolve potential risks quickly. We're aware that DOE has had an excellent record in the past responding to accidents. The

25 greater number of shipments will undoubtedly task existing response teams. These will need to be augmented to meet the future requirements.

And, again, Myrna Williams thanks you for the opportunity to provide input to this. And Clark County and the Commission are very interested in

this issue and will continue to be interested in it; and as well as the total EIS process. So thank you.

ELLE: Thank you.

* * * * * *

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
C.O.R.E. WORKSHOP
(PUBLIC COMMENTS)

Held at the

TRAIN STATION FACILITIES
Caliente, Nevada

on

April 16, 1996
Beginning at
7:00 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

KEY to Transcript Symbols and/or Abbreviations

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CALIENTE, NEVADA, APRIL 16, 1996, 7:00 P.M.

PUBLIC COMMENTS

ROBERT O'CONNOR

O'CONNOR: Let's see now if I can get together what I want to say and everything might be all right. My name is Robert O'Connor. I was born in Reno and raised in Lincoln County. And everybody knows where Lincoln County is. That's where Clark County ain't going to get any water.

(LAUGHTER)

O'CONNOR: I'm quite interested in what's going on here tonight. I might add that I'm also a candidate for the President of the United States. Now, I don't want you to worry about it because I might not make it. In fact, chances are slim. But I don't think I have to make it. What I need is a place to talk once in awhile. My own personal opinion is, that we have very, very serious problems in this country, and some of them have to do with that Nevada Test Site. What I'm wondering -- and I have been wondering it over a period of years -- who has gained anything for all the activities that have been going

on out there; anybody, I mean, except those working there?

Now, this Environmental Impact Statement, that I guess is in the planning stage, what is it going to say that hundreds of other Environmental Impact Statements haven't said? It appears to me that we have about enough Environmental Impact Statements to sink a battleship. And after an Environmental Impact Statement is completed and put in book form, does anybody ever look at it again; or is it put in storage some place? I read an article one time on government documents and how many billions or millions of dollars are involved in printing information, that nobody really gives a damn about, I might say.

Now, this thing that's going on out at the Nevada Test Site or the proposals that are being proposed, who benefits, anybody except those working out there? Which is good, I'm not against anybody working anyplace, because jobs are becoming hard to find. But I hate to see every job in the United States of America funded by the government. Somebody's going to pay these bills, and I don't know who it is anymore. Now, this Environmental Impact Statement, I don't know what it's going to say, but I

would like to have one of them whenever it's completed. I know for a fact that out there at that Nevada Test Site, there have been -- I think the last time I read in the paper, there was 700 and something underground tests. Now, on these underground tests underneath that ground, there is an atomic dust contamination. Is anybody concerned about that, that this contamination is not in a casket or any place else; it's just sitting there in the dirt? Is there any danger there?

And these proposals that -- I don't know what you're proposing to do out there now. But whatever they are -- I read in the paper where maybe they would resume atomic testing. Now, how much more do we need to know to find out that we can blow human beings off the face of the earth, and we don't seem to have any qualms about doing it? So I don't know whether I have any questions or whether I'm just talking through my mouth. But are we going any place? Are we spending money just because we have some money to spend? And is anybody gaining anything except those who are working out there? I think these are legitimate questions that the public ought to be asking one of these days, because money, to my way of thinking in American, is going to become harder and

harder to come by. Because under the guides of the democracy, all I see is government government everywhere, on every level. And it's quite apparent that those in the government are doing quite well, and those many out of the government are maybe not doing so good.

I don't know whether I've made any sense here today or not, but at least I said what I had to say. Thank you.

CHAMBERLAIN: Appreciate that. Thank you.

ALAN CHAMBERLAIN

CHAMBERLAIN: Who is your natural resource person here, is there someone here, geologist-type?

MAXWELL: Yes.

CHAMBERLAIN: Is that you? I just have a few questions.

O'CONNOR: I think I do have a question.

WORKSHOP NOTES 4 (CONTINUED)

ROBERT O'CONNOR

O'CONNOR: What does the future hold for the Nevada Test Site? What does anybody want to do? Is anything contemplated or talking about doing something?

ELLE: I think the simplest answer is, that the primary mission of the Nevada Test Site has been conducting underground nuclear tests, providing the level of assurance that the nuclear defense capability of the United States has and continues to be viable. And that will be the maintenance of the capability, the ability to do an underground nuclear test. If the President, for whatever reason decides he has to do, that would still be done at the Nevada Test Site.

O'CONNOR: You mean more underground nuclear tests?

ELLE: I mean, that's the primary purpose of the Nevada Test Site. But there are a whole lot of other things that we do at the Nevada Test Site in terms of defense experimental work that requires an isolated location, other activities like the Spill Test Facility where we can do work for commercial operations that need a capability like we have.

WORKSHOP NOTES 4 (CONTINUED)

O'CONNOR: I read, I think one day in the paper where they planned on making sunscreens using sun rays to generate power. Is that true?

ELLE: That's one of the things that is being looked at.

O'CONNOR: I have a comment on that also. That procedure was already done in the state of Washington. Now, do we have so much money that we can do that in every state? Did we learn anything from that in Washington? They also had windmills up there.

ELLE: I think the premise on these proposals, the commercial industry is still interested. I believe they have a better opportunity to make commercially available solar power. They want a place, and the Test Site is a place they have looked at in trying to do that.

O'CONNOR: Well, there's lots of sunshine in Nevada. If it will work any place, it would work here.

ELLE: Right.

WORKSHOP NOTES 4 (CONTINUED)

ALAN CHAMBERLAIN

(MULTIPLE INAUDIBLE CONVERSATIONS)

CHAMBERLAIN: I'm Alan Chamberlain from Hiko, Nevada. This is the kind comment I asked when I was down in Las Vegas. The question I have is, I need to follow-up on where can I obtain data on the west faults? I haven't seen it anywhere in this document. And that is the cutting edge of geologic technology. Is that available? And can I get a hold of it? And another comment is, and I don't know who told me this, that a lot of geologic information in here is based on peer review papers. Is there no independent persons without any connection to government geology going out and looking at this? And is that data available? Where can I obtain it?

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MAXWELL: There is a technical library at the facility on Losee Road, and it's all computerized, however you want it.

CHAMBERLAIN: Can you download it?

MAXWELL: They will run copies of the documents for you.

CHAMBERLAIN: So it is available, great. I'm just curious what the data is and what's available. It talks about a generalized strat column

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WORKSHOP NOTES 4 (CONTINUED)

(Cont.

on page 421, this column here. (Indicating) Has there been any attempt to identify sequence to amend this column, the water aquifers, the deep carbonate water aquifer system? Is that done somewhere? Is that available? Has there been no attempt done on that? You know, there's sequences in here and some of them will be better aquifer systems and some are aquitard systems. Has that been identified in this stratographic section?

MAXWELL: I'm guessing now. As part of the containment, the primary purpose in this stratigraphy in this case, is to make sure that the test would be contained. And it also runs in the water column. So I would imagine that the information has been collected. And we're also with the Environmental Restoration Program, we're characterizing the groundwater of the Test Site. And part of that is identifying those various concentrations.

CHAMBERLAIN: Okay. Yeah, because I didn't read anything in here about the deep water carbonate aquifer system. And that seems to be the most important natural resource water source in Nevada, is the deep water carbonate aquifer system. Because we're in the desert area and we get less

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precipitation than we do actual production. So I didn't see that anywhere in the statement. Because they address the deep water carbonate aquifer system and how it's interconnected between beyond the mountain ranges. They talk about the superficial water table thing, and that's okay; but they don't talk about the real water system and how that might be contaminated.

MAXWELL: We are in the process of gathering that information now through the underground test area.

CHAMBERLAIN: And I'd be interested, who would I contact; what geologist specifically can I talk to, to see what they're doing on all this stuff? Is there a particular name? Can I get that name or do I have to call later?

ELLE: Why don't you give me your name and we'll have somebody call you back.

CHAMBERLAIN: Okay, that would be great. Maybe these are the kind of questions I need to just ask him specifically instead of asking you.

MAXWELL: Right, and get more learned answers.

CHAMBERLAIN: Okay. I don't mean to put anybody on the spot, but these are just some curious

questions and I'm just wondering if this would be a proper place to ask them. I didn't see a whole lot in here about the mesozoic and how it's connected, how it's related to oil and gas. You know, how it's related to the ore zone, the host rocks. How it's related to the water aquifer systems. So I don't know, maybe that's another question to ask the geologist. Did anybody evaluate these stress values?

On this figure here, on Figure 4-24 on page 4 on 2, it shows a fault map. I don't see any thrust faults in there. I guess the question I have, you know, why aren't they there?

MAXWELL: This identifies areas where we would have in fact on that resource in one of the proposals.

CHAMBERLAIN: Okay. I guess my comment is, is when we test the nuclear test or whatever, what structural plate are we in and what are the water aquifer systems within that structural plate; and how does it go through the mountain ranges? We know there's normal faulting but there's big thrust faults in here that give you a lot more communications. I don't know if that's been addressed. And if it hasn't, I'd like to talk to somebody about that, because I think that's a real important issue.

My favorite part, the hydrocarbon resources. Who is the author for this particular part of the EIS? I'd like to know who that is.

HENDERSON: There's one or two people. Basically, I think the correct response is, is as you have comments -- and it sounds like most of them are valid -- we're obligated to address them in the Final and try to write an answer. And not only that, but to call you and give you the answer of these kinds of things that need to have written responses for them.

CHAMBERLAIN: Okay. My question is, you know, who were the -- were they certified petroleum geologists?

HENDERSON: It would have been one or two different Ph.D geologists. I know one was Bechtel and one was PAI.

CHAMBERLAIN: Okay. Then I guess the question I'd have is, are they certified petroleum geologists or are they just general geologists? I think that's real important. And I'd like to know what these previous investigations are. And do we have petroleum geologists seeing those wells or is it just normal geologists? Those kind of questions, I would like to talk to your technical people, if they would give me a call. I just want to make sure that

those things are addressed.

ELLE: Well, I think part of the answer is, is the details that you're asking for or asking questions about, this is a summary level document, it's not a detailed geological investigation. So in the sense of our trying to respond to your questions or comments, you may see in the comment response document an answer like that, and then an invitation to come and talk in more detail to the geologic people, if that's what you want to do.

CHAMBERLAIN: Okay. I guess I'm saying is, you know, even on the general scale, some of these general things I want to talk about, it should be addressed. The sequence stratigraphy and the aquifer systems, that's really important. And those haven't been addressed, at least I haven't seen them. And those are pretty general. So I'd like to see it in the Final Draft. Anyway, that's my comments.

ELLE: Okay.

CHAMBERLAIN: Appreciate you all. Thank you.

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NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
C.O.R.E. WORKSHOP
(PUBLIC COMMENTS)

Held at the

TONOPAH COURTHOUSE
Tonopah, Nevada

on

April 23, 1996
Beginning at
7:30 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

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TONOPAH, NEVADA, APRIL 23, 1996, 7:30 P.M.

PUBLIC COMMENTS

VIOLA WHIPPERMAN

WHIPPERMAN: My name is Viola Whipperman. How deeply involved does DOE plan on getting with the locals to develop some new activities on the Test Site; how deeply involved --

ELLE: Well, I think --

WHIPPERMAN: -- with the actual implement planning and implementing?

ELLE: I believe if you look at what's happening right now, the Community Reuse Organization, the Nevada Development Corporation, is a DOE-funded activity to do exactly that; is to help commercial kinds of people that have an interest in using the Nevada Test Site for, like rocket launching. I mean, that's an activity they're pushing and that's an activity that we're involved with them in and evaluating how it can happen. And I think there's a couple of other organizations. And I know Bechtel, the new contractor, has made a lot of proposals to bring in new kinds of things. So there's a lot of

WORKSHOP NOTES 5 (CONTINUED)

commitment to the future in trying to bring in different kind of activities at the Test Site.

The other half of that answer is, in the sense of the Resource Management Plan, if you looked at the framework, what we want is public involvement in the development of that plan and to make sure that as we go forward in all of these activities, that there is clear involvement in how that Resource Planning happens.

WHIPPERMAN: Okay.

WADE BARTON

BARTON: Thank you, and greetings from Esmeralda County. I am Wade Barton, the Chairman of the Esmeralda County Commission. And I would like to say I appreciate this opportunity to speak on behalf of Esmeralda County. My hat's off to the research and development out on the Nevada Test Site. I think that the Nevada Test Site has seen a great loss in jobs and it's been quite an asset to the state of Nevada for many years. And I'd like to see progress and development to continue out there.

I'm a member of the Community Reuse Organization, which has a title now, the NTS

WORKSHOP NOTES 5 (CONTINUED)

Development Corporation. And we are behind any kind of progressive development out at NTS. I've seen presentations put on from Kissler Aerospace considering the reusable satellite system. I was a member of the South Central Nevada Federal Complex Advisory Board. And I take a lot of credit in getting the CRO developed for the state of Nevada.

I'd like to say that some of the data -- well, I'd like to see some data in the document addressing employment issues for Esmeralda County. Some of the issues have been put forth for Nye County, but not necessarily Esmeralda. And I'd like to see some of those numbers. And I'd also like to see Esmeralda County possibly defined as a cooperative agency. And again, I appreciate this opportunity.

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ELLE: Thank you, Wade.

RAY SALISBARY

SALISBARY: I'm Ray Salisbary. I'm from Lander County. I'm on the Lander County Land Use Advisory Commission. I just put my "X" down there because I didn't know what was going to happen, so just in case. The only two things I can see that's

really important out there, and that's to give private industry and the commercial people a chance to use the surplus lands. And any of the contaminated lands that can't be used should be turned back over to the BLM and let them manage them. Thank you.

(LAUGHTER)

ELLE: In relation to the last comment, we have talked to the BLM about that and they're not too excited about taking that land.

WAYNE PERKINS

PERKINS: I want to comment as a Commissioner for Nye County. And I too want to see things addressed and I know they have been. The question has been brought before you on economic development for Tonopah and more use of the businesses and the people available here in Nye County, Tonopah; and this is the same with Goldfield, because there's a road opened up into that Test Site from their side. There's people with skills and talents here that would like to see those people that are dealing up in this area, to leave some of that money here instead of flying it back to Las Vegas. I think it's very important.

ELLE: Okay.

PAM SIRI

SIRI: My name is Pam Siri. I'm just curious as to which alternative it is that you favor at this time?

ELLE: Well, as I said, we haven't defined a preferred alternative. But I think if you talk to people, Alternative 3 -- I mean, trying to maximize what we believe is the national resource that's represented by the Test Site is the kind of thing that we're looking at. I don't want people to believe that we're not interested in people's comments about the other alternatives or that we would not consider them in shaping the preferred alternative itself, because we will use those comments in that way. But I think everybody's -- I mean, the public is interested in jobs and economic activity, and I don't think people want to see the Test Site sit there with nothing happening on it.

LYNN KRETSCHMER

KRETSCHMER: My name is Lynn Kretschmer. I'm from Tonopah. I worked at the Test Site for 15 years and I retired in '93 as a laborer. I'd like to know what the activities that are going on out there now and if they're going to -- I mean, I know the union is gone, per se. And do you think there will be any union jobs back, and what is really going on out there now?

ELLE: Well, I don't think the union is gone. Bechtel is the new contractor, but the union contracts went with Bechtel when the other contractors went away. In the sense of jobs, certainly the number of people working on the Test Site is very much smaller than it was, you know, three or four or five years ago. And there is an effort -- as I've said, Bechtel is interested in increasing the scope of activities that they have on the Test Site. And a major part of their contract is to find new work and to bring new activities to the Test Site.

KRETSCHMER: But Bechtel is not the only contractor out there though.

PERKINS: She's talking about TTR.

KRETSCHMER: Yeah, TTR.

ELLE: Sandia is still the contractor at TTR. And they're interested as well in whatever new activities they can do there. And I can't speak for the Air Force in terms of how they would use existing facilities.

KRETSCHMER: Thank you.

JUANITA HOFFMAN

HOFFMAN: Since I was a facilitator, I'm probably not supposed to speak, but Juanita Hoffman. And I would just like to say -- reiterate what the other folks have said about employment for the rural counties. Not only are we your closest neighbors, but I think that we've been the best neighbors; and Clark County is just nothing but trouble.

(LAUGHTER)

HOFFMAN: And employment of people in Clark County is just kind of a drop in the bucket to their economy and to Esmeralda or Nye County's or Lincoln County, for that matter; it's a big difference. And I don't know if this is even appropriate for EIS comments, but DOE ought to be able to have some influence on Bechtel to pressure them or suggest nicely that they look to the rural counties to

hire people.

ELLE: Okay.

WAYNE PERKINS

PERKINS: Don, there's another comment I'd like to make on that, and it's kind of what she touched on. You never hear the Test Site being 15 miles east of Amargosa or 40 miles south of Beatty, Nevada; Nye County. It's always 90 miles north of Las Vegas. It's not even in that county down there. So there's a PR thing that really ticks people off around here, "Why isn't it close to some of us?" It's just like we don't exist. A little PR in that way would help a little.

ELLE: Well, we did have one comment early-on, that we left Pahrump off the map. And Pahrump is on the map and it will be on the map. And we can add words in the document that reflect where other places are in relation to the Test Site.

MASON HAYES

HAYES: My name is Mason Hayes. I'm from Goldfield. I just wanted to ask you, Dr. Elle, if some of these issues might be environmental justice issues because we are economically depressed areas; as I'm sure you know, and the Department is also aware of? 4

ELLE: We have addressed environmental justice in this document. The guidance that we have, even though environmental justice has an issue as the interest that the President has expressed, in that the guidance we have does not put rural communities like Goldfield in the category of environmental justice. Though, we have identified that infor -- put information in the document that talks about environmental justice from that point of view. I mean, environmental equity is a different issue.

HAYES: I suppose then my follow-up question then would be, why were our areas that are economically depressed not considered suitable for environmental justice? 5

ELLE: Maybe Felicia can answer that question.

BRADFIELD: Well, actually, they were

addressed. Each area was considered discretely and in combination with the county it was in, so it was addressed. It is in the document. It should be in Section 12.

ELLE: Well, before you go home, point out to them where it is in the document. If it's not properly addressed or if there needs to be more information, then that's a comment that you could give us. Then we'll do some more work on putting it in there.

JUANITA HOFFMAN

HOFFMAN: I just have a following question about environmental justice. Is it not true that it's not strictly minorities that are looked at or communities where they've all -- you know, they've already had like hazardous waste facilities or something like that? Is not one of the criteria an economically depressed area? 6

ELLE: It is.

HOFFMAN: Okay, thank you.

ELLE: But one comment I would make on environmental justice, is it's difficult for us, in writing this document the way we've written it, to

address that issue clearly. And primarily, because there is no clear federal guidance on how to do it. I mean, the issue has been around for a couple of years and there still is no clear guidance on what it is you have to do or how it gets addressed.

VIOLA WHIPPERMAN

WHIPPERMAN: If there were new activities that were going to be starting up, on TTR in particular, say a completely new project, would they have to go under the regimen of going through the EIS all over again and with the horror of the desert tortoise, you know, blooming over us, anything like that; so you can't move 50 feet in any direction for fear, or horror of the kangaroo/rat type thing? Is something going to be possible to be done out there or are we going to be trapped? 7

ELLE: I don't think we're trapped in any sense in trying to do new activities. Particularly with the desert tortoise or other endangered species, if you identify an impact, you figure out a way to mitigate that impact. But in terms of the way this document is written, it addresses high-level activities on TTR. If there are a new program or new

activity that people are proposing, they wouldn't necessarily have to write a new EIS, but they could write an environmental assessment. It's a smaller document and it doesn't take as long to do.

RAY SALISBARY

SALISBARY: After this is all said and done, who would be in control of the Test Site, still the DOE?

ELLE: DOE would retain control of the Test Site.

SALISBARY: Okay.

PERKINS: I guess you've answered all the questions.

ELLE: Well, if people have more questions after we end this session, I'd be happy to try and answer them for you. And thank you for the opportunity to come and talk about the EIS and what it is we're doing. If you have written comments you want to get to us, May 3rd is the end of the comment period. If you postmark them May 3rd and we get them on Monday, we'll still look at them.

PERKINS: And we'll go ahead and breakdown. Thank you, Dr. Elle and the UNLV folks for

coming up here and bringing this to us. I appreciate the assistance and the learning that I've got from it. Thank you.

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WORKSHOP NOTES 6

THIS VERBATIM TRANSCRIPT CONSTITUTES

THE OFFICIAL RECORD OF THE

NEVADA TEST SITE ENVIRONMENTAL IMPACT STATEMENT
C.O.R.E. WORKSHOP
(PUBLIC COMMENTS)

Held at the

WEST LAS VEGAS ARTS CENTER
North Las Vegas, Nevada

on

April 25, 1996
Beginning at
7:00 p.m.

REPORTED BY: Lana Stewart
Senior Verbatim Reporter

Bechtel Nevada
Reporting Services

WORKSHOP NOTES 6 (CONTINUED)

KEY to Transcript Symbols and/or Abbreviations

Webster's New Collegiate Dictionary: "Verbatim -- in the exact words; word for word."

Dash: [--] Indicates a sentence not completed by speaker.

Dots: [...] Indicates something was said by the speaker, which, as spoken, is neither audible nor decipherable to the reporter or from the taped cassette recording.

(ph) Indicates phonetic.

(sic) Represents exactly as said by the speaker and is used to alert the speaker/reader to an error in the record.

Parentheses: [ ] Words within parentheses are reporter's explanatory comments.

VOICE: Indicates an unknown speaker.

Uh-huh: Indicates affirmative answer.

Huh-uh: Indicates negative answer.

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ENVIRONMENTAL IMPACT STATEMENT

C.O.N.E. WORKSHOP AGENDA

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NORTH LAS VEGAS, NEVADA, APRIL 25, 1996, 7:00 P.M.

PUBLIC COMMENTS

CAMILLE EDWARDS

EDWARDS: My name is Camille Edwards. My address is 2970 South Monte Cristo Way, Las Vegas, Nevada 89117. For several years, I have heard the term repeatedly low-level waste, low-level waste. I'm a layman. Can someone give me a clear and precise definition of exactly what is low-level waste?

ELLE: I had a simple answer for that and it may sound silly. Low-level waste is anything that's not high-level waste. High-level waste is spent nuclear fuel out of a power reactor. And it has a legal definition, and it's limited primarily to that kind of radioactive waste. Low-level waste is contaminated dirt, concrete, contaminated clothing, protective clothing that people might wear. It's essentially garbage that has radioactivity in it, that's not very radioactive in most cases. But that's what it is. It's a whole set of stuff that has radioactivity in it, but it's not high-level waste.

CYNTHIA WATSON

WATSON: My name is Cynthia Watson. And my question -- you were talking about the response. And I guess my question is, since the Test Site at one point hired over 5,000 people, and now there is an opportunity to keep this open, are you getting overwhelmed response from people? I mean, I would think if people -- you know, if there's an opportunity to employ that many people to go back -- I mean, let's just say we just don't want to go back, how has the response been? That's just what I want to know. That's one question.

ELLE: Well, since we've had these eight public meetings, I'd categorize the responses not very good in terms of numbers of people that come and listen to us talk about the document or the process, or what we want to do. The number of people we have here tonight is probably -- except for the Las Vegas meeting we had where we had -- I think we had about 100 people. We had 20 people in Tonopah. We have more people here tonight than we have had at a lot of the other meetings. I guess on one hand, the struggle we always have is trying to present a document like this and get the public interested in it enough to

come and listen and talk about it. That's why we went to UNLV and asked them; but in a different way, have people get interested in what we're doing.

WATSON: Okay. Then my next question is off of what Ms. Edwards said on low-level waste. So it says here what are some of the low-level waste that are being considered. So from your explanation, it isn't different categories, it's just going to be low-level waste? So they could be burying jackets and anything -- it's all one category then; is that what you're saying?

ELLE: Right. It may look different in terms of -- from a place at Fernald in Ohio, they're digging up a lot of contaminated dirt that has radioactivity in it. And they put it in big containers and they ship it out here and we put it back in the ground. That's one kind of low-level waste. If they take down a building that they've used in the past that has radioactivity in it, you can't separate the radioactivity from some of the concrete or the beams or the other material in the buildings. So they take the building down and they put it in a package and bring it out here, and we put it in the ground.

WATSON: Okay, thank you.

ELLE: And then there's other sets of things. People that work with radioactivity, they wear protective clothing or they do other things. So if protective clothing gets contaminated and doesn't get cleaned up, they put it in a barrel and send it to us.

WATSON: Thank you.

CAMILLE EDWARDS

EDWARDS: I'm sorry, I need a further clarification. I understand now what is low-level waste. At what point, or what measuring tool is used to determine whether the low waste -- the waste is a low impact or high impact? And if it is high impact, is there a different storage place for that waste? Is there a different method of transporting it? Is there a different method of encasing it? How is that handled?

ELLE: The answer to the last three is yes. Let me say high-level waste again in a different way. When we generate electricity in a nuclear power plant, when the fuel gets burned-up, it ends up being radioactive. And by legal definition, that spent fuel is high-level waste. The reason they're working on

Yucca Mountain is they're trying to find out whether that place is suitable for disposal of that high-level waste. And there's a second piece to high-level waste. In the past, we used to take that spent nuclear fuel and chemically dissolve it and separate it, and get some radioactive material back out of it so we could use it again. And the waste material that resulted from that chemical process is also defined as high-level waste. So we have tanks of that liquid high-level waste around. And they are trying to create other processes to solidify it and bring it also to Yucca Mountain or a place like Yucca Mountain. So high-level waste is a very limited set of radioactive material that's different from the rest of the radioactive garbage that we generate.

WATSON: (Eddie) She wanted to know how it would be transported.

ELLE: The high-level waste will be transported in special casks, specially designed containers that are much more robust and have to meet a whole different standard in terms of how that material is packaged and contained.

EARL WHITE

WHITE: Good evening. For the record, my name is Earl White. I'm the President of a consulting firm called the Capital Group, 5000 West Oakey, Suite 1, 89102. My question, sir, is regarding, first of all, the alternatives expanded use. Would that provide more opportunities or -- expanded use would mean more people being hired and things of that nature?

ELLE: Yes.

WHITE: Okay. What -- I represent small minority and women-owned businesses. How would they become a player and become a vendor with this expansion process, if this was to take place? How would a small business -- and I'm not talking about a major -- you know, these are small women-owned minority businesses. And as you know, with the affirmative action being rolled back and things of that nature, how will these businesses be able to come to you -- come to your Department or your agency and try to do business without going through a whole bunch of red tape or going through stuff that they have been before?

ELLE: Well, I think that can be done two

ways. Both Bechtel as a contractor to the Department has, in their contract, requirements that they use that contracting vehicle to let people like that help them do their work. The Department also, as we issue are our own contracts, look at small disadvantage businesses or women-owned. For you to get information about that, I think you need to contact our contracts people and they can put you on a list. And as they issue contracts for competition, you would get that information.

WHITE: But as you know, the smaller businesses, they may not be able -- smaller businesses -- or is the Department of Energy looking to provide -- I'm not talking about set-asides. I'm talking about for the smaller type of companies, things that they can bid on; whereas a major company can just come in and outbid them with -- I mean, people are using the term set-asides, and I don't want to use that term because it's not politically correct now. When you use set-asides, people close the door and won't return your phone calls and all that nature. So how would a small -- how would I direct my clients to try to participate and be able to follow to make sure that there's a mandate for the services that they can provide?

ELLE: Well, again, the simple answer is, to get on the list of competitive announcements so you get that information. And I can give you the name or I can have people call you to let you know how to do that.

WHITE: Okay.

DEBORAH JACKSON

JACKSON: My name is Deborah Jackson. I live at 1213 North I Street. That's in Las Vegas 89106. I have really two questions. The one question still regarding the low-level waste and the high-level waste; I fully understand the difference between the two and how they're categorized. But I'd like to ask also, since you're saying that low-level waste is certain items or perhaps clothing or whatever, do you also look at the level of radiation contamination that they would have? Some types of work perhaps that some people would do would cause them to become more contaminated, their clothing and so forth still may have high levels of radiation. Is that also a factor in determining whether it's still low-level?

And the other just statement, as

when the gentleman was asking about the businesses being included; minorities, women, so forth. Even though it may seem simple to say just make that call or go and check with the contract department, we know how sometimes some people are not always as they should be. And I remember with the one company, TRW, I remember how black people and women who were qualified to participate, were given the run-around and told to go to this department and now you contact this person. And they never could get included. So I hope that we don't see that same thing, and it's not just a thing that people go and they get put on a list, but they never get contacted. So I hope that something is going to be put in place, because we definitely want to be included as African Americans, as women, Hispanics, whatever. I hope that there is something in place to make sure that this same type of thing doesn't happen, because of course, we get tired of that; we're taxpayers too. So that's what I wanted to say.

ELLE: Okay, I appreciate that comment. In answer to your question though, that's where it gets confusing, because low-level waste can be very radioactive. In fact, that does happen. I mean, that is true. So high-level waste is very radioactive and

low-level waste, as a category of waste, can also be very radioactive. I didn't mean to confuse that.

JACKSON: I'm not confused at all. But that's why I asked that question. Because even though you're saying low-level waste, it could be highly radioactive. Even though because I was listening and I fully comprehended how you had broken down the categories, but there's a lot of different things that could still be with high levels of radiation; but they're classified as low-level because of the category it was put in. And that was my question. So there still may be some things that we're saying are low-level, but are really maybe high-level as far as radioactive waste.

ELLE: That's right.

JERRY HALL

HALL: My name is Jerry Hall. I've been a resident of Las Vegas 41 years. Twenty-three of those years, I have been working out at the Test Site. Don, your last slide brought question forward to my mind: "DOE wants to continue managing." You hear a lot of controversy on the radio, the papers, that they want to dissolve DOE. Is this going to happen, and

what department will take over the responsibilities? Or is it just going to phase into another government entity; Department of Defense, so forth? That was one of my questions.

ELLE: Well, let me answer that. I believe when you look at what Congress is trying to do -- what some Congressmen are trying to do with dissolving the Department, the thing you never hear about, that some of the functions of the Department have to continue; like management of the nuclear weapons that this nation relies on. And if you read their statements, that program, that responsibility goes to the defense department some place. Clearly, the contamination we've created in the past has to be cleaned up. Somebody's going to have to do that, whether it's DOE or another agency, or some other organization.

HALL: That's correct.

ELLE: So the simple answer is, if Congress dissolves DOE, a lot of that work is going to continue some place; and the place like the Test Site is going to be managed by somebody else.

HALL: Now, do you believe that the Final Draft will be completed before?

ELLE: Yes.

HALL: Okay. My main question was, as DOE and all these -- Bechtel and so forth coming up with all these ideas of different tests and so forth out at the Test Site, the LYNER, the BEEF, and all that, what types of experiments is DOE helping the labs so the labs have a handle on what's going on, so we can stay out there and work and do the tests; the overseer on the project? It seems like a lot of these projects are not laboratory-controlled or laboratory tests. Possibly Bechtel is taking it over and it would be Bechtel stuff. So how much of it is DOE helping the laboratory overseeing some of these projects? And what kind of projects are DOE going to bring out there for the lab personnel?

ELLE: Well, you have one lab guy sitting behind you. But I think the answer is, that the Department is very invested in maintaining the capability of the Test Site for the laboratories to do experimental work that they need to do in order to assure that the stockpile is safe. So DOE has, on one hand, that responsibility and that investment in the laboratories. And on the other hand, there are the Nevada Development Agency that was created out of the Community Reuse Process. It's a DOE-supported organization and its intent is to find other things to

do on the Test Site. So there is that separate kind of an organization that DOE is supporting as well.

HALL: Well, you mentioned solar, solar energy. I'm not sure, but that is not a lab function.

ELLE: That's right, it's not.

HALL: Okay. These are the kind of things that I'm wanting to know. Besides testing and stockpile and doing all this other type of testing, what other kind of projects could the lab do out there or what other kind of projects, should I say, is DOE helping or wanting the lab to oversee that doesn't have anything to do with testing or storage of -- you're talking about storage of low-level waste. The lab doesn't do any of that. They might create the low-level waste, but --

ELLE: Well, I'm not sure there's a good answer in the short-term. I do know that in the long-term, there are big experimental facilities that are on the drawing boards and people are thinking about, that the Test Site would be a good place for placing them. And those facilities would be managed by the labs.

HALL: Okay. And one other question was, you hear a lot of bad publicity about the Test Site all the time. It used to be years ago, wow, you

worked out at the Test Site; great, good solid job and nobody put you down. Just like in business, when you get a business that's going downhill, both in maybe their management or their product or something, they change the name. Can we get rid of the NTS and call it Environmental Science Testing Laboratory, and get rid of NTS? Change the name and we all work under an umbrella type as a laboratory doing -- bringing people in from all different kinds of military, government facilities. Make it where they want to come out.

And it's just like Bechtel coming in now, shutting down bowling alleys and our rec -- it's not being a place where you would want to work anymore. If you want to bring outside people to come into the Test Site, these people come from far away, they need to have -- when they're off hours, they need to have a nice place to sleep, and then you have to maybe have a nice place to eat dinner. Now, we're talking about gettin' away with breakfast. They're shuttin' down breakfast. You're hearing rumors about dinner, the prices jacking up; our bus rides doubling going out to the Test Site. To me, it's not practical to try to sell the place. You have to try to sell the place as a great place to work and bring people in.

ELLE: That is the kind of a comment

that -- I mean, you have made that comment, it will be part of the record, and we will try to answer it. But I agree very much. And I think creating the Test Site, whether you change the name, and that has been proposed --

HALL: Well, DOE let Bechtel take the contract. You would think that there would be a little control in there on what's going on.

ELLE: Right. It is a struggle.

NIRA MC COY

MC COY: My name is Nira McCoy. 5805 Gordon Avenue, Las Vegas, Nevada 89108. And I would like to see the Test Site remain open, new business brought in and the Test Site kept open; and we stay in the readiness stage. Thank you.

GLORIA SMITH

SMITH: My name is Gloria Smith. I just want the Test Site to stay open so there will be more jobs for people. That's it.

SANDRA OSHINSKI

SHINSKI: Good afternoon, my name is Sandra Oshinski. My address is 9348 Red Rose Avenue, Las Vegas, Nevada 89129. The question I would like to ask, or the statement I would like to pose is a transportational issue. I would like to know, in terms of transporting this waste, how -- what route do you plan? If this current plan that you're trying to get approved is approved, how would you transport the waste? Would it come over the Dam or through the loop at I-15 and 95? And the second part of the question is, if there was an accident, especially over the Dam, what method would you use to try to retrieve this radioactive waste?

ELLE: Well, I think the discussions you'll see in the Transportation Document and what we've done with the local stakeholders, we try to tell the drivers, the carriers that are bringing waste to the Test Site, not to come over the Dam. We have analyzed the risk of doing that. And the risk numbers that you look at for transporting material across the Dam are very, very small; primarily because of the speeds the trucks go across there are pretty slow. So the likelihood of an accident are very small also.

Going out to the Test Site, if you're coming from the east, you have to go through the Spaghetti Bowl. The safest routes that carriers use are on the interstate routes. In terms of an accident and the response to it, the emergency response plans of the local communities, the state, people would respond to an accident of radioactive material like they would to an accident of any other hazardous material. The first thing to do would be to keep people away from it, figure out what happened to it; what you had to do to clean it up. And then you'd clean it up and you'd take it to where it was going. And we do have a recent example of some of the waste material coming from Fernald to the Test Site. I think in Ohio some place, the driver went off the interstate into the median. The truck turned over and the package of waste also turned over, but nothing happened to it. They were able to come out in a couple of days and pick it up and put it back on a truck and send it on to the Test Site. So we have discussions with the local communities. We do have emergency response capability. We do have communication with them, so that process is in place.

WATSON: (Eddie) Also, on that same line, that DOE has one of the best safety records as far as

WORKSHOP NOTES 6 (CONTINUED)

(Cont.)

transporting waste anywhere in the world. Is that correct?

ELLE: I think if you look at the historical numbers in terms of accidents with low-level waste, they're almost infinitesimally small.

WATSON: (Eddie) And a lot of people have concerns about the Spaghetti Bowl. But you would be surprised at the number of very dangerous material that is transported through there every day. The trucks are simply not marked. They have numbers on them and the police and the fire department know what's in there, but the normal public can be right behind it. And it would be very dangerous material and have no idea how dangerous it is, simply 'cause they took the markings off the truck.

GRASSMEIER: The containerization is very important. And there have been accidents of low-level waste, such as Don referred to. But the container was strong enough so it didn't open; therefore, it didn't release the radioactive contents to the environment. And all the emergency responders had to do was pick up the container, put it back on the truck, and keep on trucking.

WORKSHOP NOTES 6 (CONTINUED)

CYNTHIA WATSON

WATSON: Cynthia Watson, 2451 North Rainbow, Las Vegas, Nevada 89108. I would like to read a statement from some personnel that are working at the Test Site: Richard Fletcher, Joseph Smith, Lucy Ano (ph), Salon Font (ph), Daniel Romero, Jimmy Decker, Vicki Decker, Fanny-L. White, Donald R. Fletcher, Kathy Franklin, and Elton Richard. The statement goes as follows: "Mr. Watson has explained all the options that DOE have made available to us. We would like to see the Nevada Test Site remain open and would like to take the options that are available to us. We would like to see the Site be used to store low-level waste, and by all means continue to stay in the mode to start-up underground testing, if needed. We would also like to be made the designated area to dissemble weapons that we no longer have use for.

Mr. Watson has our full cooperation and support. We do apologize that we were unable to attend tonight's meeting, but this was due to our work schedule."

ELLE: Thank you again, Eddie, for giving us the opportunity.

WATSON: (Eddie) I'll turn it back over to

WORKSHOP NOTES 6 (CONTINUED)

C.O.R.E. Workshop

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Comments:

6

HOW WILL DOE Address SMALL AND WOMEN OWNED BUSINESS AS FAR AS THEM doing business W/ and obtaining contracts from DOE? ESPECIALLY as set forth in the alternatives described in the EIS.

If you only wish to record this as a written comment to DOE, please give to the stenographer.

☐ Check here if you wish to make a formal statement.

WORKSHOP NOTES 6 (CONTINUED)

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Paul.

RICHETTI: Thank you very much for this evening. We have until May the 3rd. Eddie knows how to get a hold of me. He's also got the numbers if he needed to get a hold of anyone in DOE. So just because tonight we're finishing up, we'll be here for a little longer, if you have any questions. But we can still get comments in on this EIS through May the 3rd. If you'd like, and you have a comment tonight, you can go ahead and talk to the Stenographer; give it to her, and she'll take it down verbatim and it will become part of the record. If you'd like to write something down as a written comment, you can write it down and then turn it into her. And then Eddie can get a hold of me any time and we'll go through whatever we have to and put the comment into the record. And that's all I have.

Again, thank you very much for coming by this evening. Thank you, Eddie.

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