DOE/WIPP 91-030

MITIGATION ACTION PLAN FOR THE RECORDS OF DECISION FOR THE WASTE ISOLATION PILOT PLANT

FINAL AND SUPPLEMENT ENVIRONMENTAL IMPACT STATEMENT

JULY 10, 1991

EXECUTIVE SUMMARY

The Environmental Impact Statements (EISs) for the Waste Isolation Pilot Plant (WIPP) and their Records of Decision (RODs) commit the Department of Energy (DOE) to mitigative actions that will minimize or avoid potential environmental impacts at the WIPP Project. As specified in DOE Order 5440.1D, a mitigation action plan (MAP) is required that addresses mitigation commitments and implements mitigation actions with the potential to adversely impact human health or the environment.

This MAP focuses on mitigation commitments stated in the RODs to the 1980 Final Environmental Impact Statement (FEIS) and the 1990 Final Supplement Environmental Impact Statement (SEIS). Specific commitments and mitigation implementation actions are listed in Table 1. The comprehensive listing, presented in Table 1, is the central focus of this MAP and will be updated as needed to allow for organizational, regulatory, or policy changes.

Eight specific commitments were identified in the FEIS ROD. These commitments pertain to the construction of the WIPP facility, preparation of a supplement to the FEIS if warranted, removal of waste from the INEL, high-level waste experiments, and the implementation of proposed mitigation activities described in Section 9.6 and Appendix J of the SEIS.

Commitments regarding removal of waste from INEL by 1990 and high-level waste experiments are no longer applicable due to the promulgation of new policies, regulations, and agreements that have changed the mission and schedule of the WIPP. Mitigation activities related to all other FEIS ROD commitments have been completed or are in place through the implementation of WIPP specific plans, programs, and procedures.

Eleven mitigative commitments were identified in the SEIS ROD. These are divided into five categories: NEPA Compliance, Regulatory Compliance, Transportation, Test Phase, and Emergency Response.

In some cases, the implementation of mitigative actions for SEIS ROD commitments have been modified due to minor changes in transuranic waste transportation and handling systems since the issuance of the SEIS ROD in June 1990. For commitments related to the initiation of the Test Phase at WIPP, however, all mitigative activities have been initiated or are currently in place. For commitments related to the Test and Disposal Phases, the implementation process and mitigative actions have been identified.

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS

BLM	Bureau of Land Management
CCC	Central Coordination Center [replaced by CMR]
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH	Contact handled
CMR	Central Monitoring Room
DOE	Department of Energy
DOE/AL	DOE Albuquerque Operations Office
DOE/HQ	DOE Headquarters
DOE-WPO	DOE WIPP Project Office
EEG	Environmental Evaluation Group
EIS	Environmental Impact Statement
EM	Environmental Restoration and Waste Management (DOE)
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ER	Emergency Response
ERDA	U.S. Energy Research and Development Administration (predecessor to U.S. DOE)
ES&H	Environment, Safety, and Health
FEIS	Final Environmental Impact Statement
FR	FEIS ROD

FSAR	Final Safety Analysis Report
INEL	Idaho National Engineering Laboratory
ISC	Integrated Systems Checkout
MAP	Mitigation Action Plan
NC	NEPA compliance
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NM	New Mexico
NMD	(Conditional) No-Migration Determination, EPA
NMED	New Mexico Environmental Department
NRC	Nuclear Regulatory Commission
NuPac	Nuclear Packaging Incorporated
RC	Regulatory compliance
RCRA	Resource Conservation and Recovery Act
REAC/TS	Radiation Emergency Assistance Center/Training Site
RH	Remote handled
ROD	Record of Decision
SARP	Safety Analysis Report for Packaging
SEIS	Supplement Environmental Impact Statement
SEN-15-90	Secretary of Energy Notice 15-90
SNL	Sandia National Laboratories
SPDV	Site and Preliminary Design Validation

STEP	States Training Education Program
TP	Test Phase
TR	Transportation
TRAMPAC	TRUPACT-II Authorized Methods for Payload Control
TRANSCOM	Transportation Communications System
TRU	Transuranic
TRUCON	TRUPACT II content codes
TRUPACT-II	Transuranic Package Transporter Type B shipping container
U.S.C.	United States Code
VOC	Volatile organic compound
WAC	Waste Acceptance Criteria
WACCC	Waste Acceptance Criteria Certification Committee
WC	Waste characterization
WID	Waste Isolation Division (Westinghouse)
WIPP	Waste Isolation Pilot Plant
WPO	WIPP Project Office (DOE)

1.0 INTRODUCTION

The Environmental Impact Statements (EISs) for the Waste Isolation Pilot Plant (WIPP) and their Records of Decision (RODs) commit the Department of Energy (DOE) to mitigative actions that will minimize or avoid potential environmental impacts at the WIPP Project. As specified in DOE Order 5440.1D (Ref. 1), a mitigation action plan (MAP) is required that addresses mitigation commitments and implements mitigation actions with the potential to adversely impact human health or the environment. This MAP focuses on mitigation commitments stated in the RODs to the 1980 Final Environmental Impact Statement (FEIS) and the 1990 Final Supplement Environmental Impact Statement (SEIS).

1.1 WIPP Background

The WIPP is located in Eddy County in southeastern New Mexico 26 miles east of Carlsbad in an area known as Los Medanos ("the dunes"), a relatively flat, sparsely inhabited plateau with little surface water and limited land uses. Most of the land is federally or state owned, and land uses are limited to traditional activities such as grazing, hunting, mining, and oil and gas exploration and production.

The WIPP was authorized by Public Law 96-164 (Ref. 2) to provide a research and development facility for demonstrating the safe, environmentally sound disposal of transuranic (TRU) waste produced by national defense activities. The DOE's decision to proceed with the WIPP project followed a thorough review in accordance with the National Environmental Policy Act (NEPA)(Ref 3). The decision called for a disposal facility for retrievably stored and newly generated (post-1970) TRU waste. The WIPP facility was designed to dispose of up to 6.2 million cubic feet (ft^3) of contact-handled (CH) TRU waste and 250,000 ft^3 of remote-handled (RH) TRU waste. The waste will be disposed of over a 25-year WIPP operational life.

1.2 National Environmental Policy Act Compliance

The National Environmental Policy Act is the first set of environmental regulations in which the United States government established a national policy to protect the environment. These regulations were implemented by the Council on Environmental Quality (CEQ) in 40 CFR 1500-1508 (Ref. 4) and provide a formal regulatory process for the evaluation of environmental impacts. NEPA regulations state that an environmental impact statement (EIS) may be required of proposed Federal actions significantly affecting the quality of the human environment. A ROD is then published, based on the EIS, in which the decision is discussed and any mitigative actions required are specified.

In 1980, the DOE published the WIPP FEIS (Ref. 5), which analyzed and compared the possible environmental impacts of alternatives including a No-Action Alternative and alternatives for demonstrating the safe, environmentally sound disposal of TRU radioactive waste resulting from DOE national defense-related activities. Based on the environmental

analysis described in the FEIS, the DOE published the 1981 FEIS ROD (Ref. 6) to proceed with the WIPP.

The Council on Environmental Quality regulations state that both significant new information and changes to a proposed action justify the preparation of a supplemental EIS. Changes such as the elimination of experiments with high-level wastes and the introduction of phased experiments prior to the initiation of operations redefined the proposed actions presented in the FEIS. Because of these changes, the DOE published the Supplement EIS (SEIS) in 1990 (Ref. 7). The phased approach stipulates that a test phase will be conducted prior to full WIPP operations (i.e., the Disposal Phase). Based on the analysis presented in the SEIS, the DOE published the SEIS ROD in 1990 (Ref. 8) to proceed with a phased WIPP development.

The requirement to prepare a MAP is a result of changes in DOE's interpretation of NEPA as stated in the Secretary of Energy Notice 15 (SEN-15-90) (Ref. 9) published on February 5, 1990. To ensure compliance with SEN-15-90 policy, the DOE subsequently issued DOE Order 5440.1D. This Order provides the DOE with requirements for complying with NEPA. As a result of SEN-15-90, the NEPA regulations proposed by DOE [10 CFR 1021.332 (A), (B), and (D)] (Ref. 10) state that the DOE will:

(a) Prepare a MAP following the completion of an EIS and ROD

(b) Explain how mitigation will be planned and implemented

(c) Prepare a MAP before taking any action covered by the EIS/ROD that is the subject of a mitigation commitment

(d) Address all mitigation commitments made in the ROD

(e) Prepare MAPs that are as complete as the information available allows

(f) Have the option of revising the MAP as more specific and detailed information becomes available.

2.0 MITIGATION ACTION PLAN

This section identifies specific commitments made by the DOE in the FEIS and SEIS RODs and discusses mitigative actions and organizations responsible for the implementation of these actions. Specific commitments and mitigation implementation actions are listed in Table 1 - Mitigation Actions. The comprehensive listing presented in Table 1 is the central focus of this MAP and will be updated as needed to allow for organizational, regulatory, or policy changes.

2.1 Commitments

To ensure that this MAP is as complete as possible, commitments made in the 1981 FEIS ROD are included in this document along with commitments made in the 1990 SEIS ROD. Appendix A contains the FEIS ROD and Appendix B contains the SEIS ROD as published in the Federal Register (Vol. 46, No.18, January 28, 1981, and Vol. 55 No. 121, June 22, 1990, respectively). The commitments are underlined to assist the interested reader.

The FEIS ROD committed the DOE to constructing the WIPP facility and to mitigating adverse environmental impacts associated with the construction phase. In addition, the FEIS ROD addressed the preparation of a supplement to the FEIS if warranted, removal of waste from the INEL by 1990, conducting high-level waste experiments, and the implementation of proposed mitigation activities described in Section 9.6 and Appendix J of the FEIS.

The SEIS ROD contained mitigative commitments related to the initiation of the Test Phase at the WIPP. For the purpose of this document, in order to organize commitments and subsequent mitigation actions, FEIS ROD commitments have been grouped into five categories: NEPA Compliance, Regulatory Compliance (including potential mitigation measures from Section 6.0 of the SEIS), Transportation, Test Phase, and Emergency Response.

The FEIS and the SEIS ROD commitments specified in this document are presented verbatim as indicated by the use of italicized print. Associated with each specific commitment is a reference citation. Where applicable, regulatory requirements that apply to the commitments are also listed.

2.2 Mitigation Implementation

To understand the nature of mitigation actions, it is helpful to review the CEQ's definition of "mitigation" (40 CFR 1508.20), which states that mitigation includes:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action

(e) Compensating for the impact by replacing or providing substitute resources or environments.

This MAP identifies mitigation actions associated with specific commitments from the FEIS and SEIS RODs, as well as the processes established to implement these actions. Planned, ongoing, or completed mitigation actions are also presented. Where possible, a description of these actions include titles of formal plans, procedures, or other documents that implement these mitigation activities. The current status and priority of mitigation actions are also listed.

2.3 Responsibilities

Responsible organizations for each specific mitigation implementation are listed in Table 1. Responsibilities specifically under DOE control are identified for the respective offices: i.e., DOE WIPP Project Office (WPO), DOE operations/field offices at the generating sites, DOE Albuquerque Operations Office (DOE/AL), or DOE Headquarters (DOE/HQ). Many mitigation actions are identified as the responsibility of non-DOE entities. These include Westinghouse Waste Isolation Division (WID), Sandia National Laboratories (SNL), and the DOE contract carrier. For example, the contract carrier has responsibility for transportation-related activities among DOE facilities.

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FEIS ROD (FR)			
FR-1	**Commitment:** *The WIPP project, which is described as Alternative 2 in the Final Environmental Impact Statement (FEIS), will be developed as a defense activity of the DOE for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States Public Law 96-164.* **Requirement:** Public Law 96-164.	FEIS ROD	DOE-HQ
FR-2	**Commitment:** *Construction of permanent surface and underground facilities will proceed on a phased basis consistent with the evaluation of data obtained during the Site and Preliminary Design Validation (SPDV) program as defined in the FEIS.*	FEIS ROD	DOE-WPO
FR-3	**Commitment:** *If significant new environmental data results from the SPDV program or other WIPP project activities, the FEIS will be supplemented as appropriate to reflect such data, and this decision to proceed with phased construction and operation of the WIPP facility will be reexamined in the light of the supplemental Environmental Impact Statement.* **Requirement:** NEPA, 40 CFR 1500-1508.	FEIS ROD	DOE-AL
FR-4	**Commitment:** *The WIPP facility will dispose of defense transuranic (TRU) waste stored retrievably at the Idaho National Engineering Laboratory (INEL). By approximately 1990 all existing waste stored at INEL will have been removed to WIPP, and the WIPP facility would be in a position to receive and dispose of TRU waste from other defense waste generating facilities.*	FEIS ROD	N/A

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-1	FEIS alternative 2 was the chosen alternative, and the Site and Preliminary Design Validation Program was initiated to construct the WIPP.	1	Completed, 1981 FEIS Record of Decision
FR-2	The mitigative construction activities have been completed. These activities included dust control, surface grade protection and restoration, construction debris removal, erosion prevention and minimum surface area disturbance. Final SPDV documentation includes WTSD-TME 3063, Rev. 1, November 1982 (Ref. 11), SAND 77- 0946 (Ref. 12), and DOE/WIPP 86-010 (Ref. 13).	1	Major construction activities have been completed. Future construction is expected to be minor and will be accompanied by appropriate NEPA documentation. The same types of mitigation actions will be used in the event of new construction activities
FR-3	Preparation of 1990 WIPP Final Supplement Environmental Impact Statement (SEIS). The purpose of the SEIS was to evaluate the environmental consequences of new findings, environmental data, and new issues. The Record of Decision for the Final SEIS was published in the Federal Register 55 (121), pp. 25689 - 25692, dated June 22, 1990.	1	1990 SEIS and Record of Decision
FR-4	Changes in the WIPP mission, and delays associated with the WIPP land withdrawl delayed the shipment of wastes from INEL to the WIPP for the Test Phase. A determination of whether to proceed with the a Disposal Phase will be made after the completion of the Test Phase. Only then will all defense TRU wastes stored at the INEL be disposed of at the WIPP.	1	Superseded by 1990 WIPP SEIS: schedule changed by Test Phase requirements

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-5	**Commitment:** *WIPP will include an experimental facility for conducting experiments on defense wastes, including small volumes of defense high-level waste. The high-level waste used for experiments will be retrieved and removed from the site prior to decommissioning the WIPP facility.*	FEIS ROD	N/A
FR-6	**Commitment:** *DOE will mitigate adverse impacts of the WIPP project on the quality of the human environment by implementing the proposed mitigation activities as described in Section 9.6 of the FEIS.*	FEIS ROD	DOE-WPO, WID
9.6 Mitigation of Impacts			
FR-6a	**Commitment:** *Various design features and construction practices could decrease the potential adverse environmental impacts of the WIPP. DOE will obtain all applicable Federal and State permits and approvals; many potential adverse consequences of the project will be avoided by complying with these regulations and statutes. In addition, the facility will be designed and operated under applicable OSHA [Ref. 14] and MSHA [Ref. 15] regulations. Environmental monitoring will allow the DOE to be continuously aware of environmental conditions and will alert them to any unexpected impacts, so appropriate action can be taken.* **Requirement:** See RC #1 in this table.	FEIS, Vol. 1, p. 9-114	DOE-WPO

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-5	The statement is made in the SEIS that experiments with high-level waste are no longer proposed for the WIPP (Ref. 7, Vol. 1, p. 3-4).	1	Superseded by SEIS which precludes high-level waste tests at the WIPP
FR-6	Mitigation activities will be implemented on an as-needed basis throughout the life of WIPP. Specific mitigation actions outlined in Section 9.6 of the FEIS are detailed in commitments FR-6a thru FR-6i.	1	The individual activities will be analyzed in appropriate documentation.
FR-6a	Site monitoring programs for air, water, wildlife, plant, and hazardous and radioactive releases have been implemented. The results are published annually in the WIPP Site Environmental Report (Ref. 16). Various design features such as lightning protection and erosion controls have been implemented to mitigate environmental impacts.	1	Program plans are completed. The Site Environmental Report is published annually.

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-6b	**Commitment:** *The mitigation of impacts on disturbed areas consists of two basic parts:* *(1) Minimizing the affected area and the associated impacts during construction.* *Control of wind and water erosion, limiting site traffic to designated roads and specific parking areas as much as practicable, clearing of vegetation and grading only as required, on-site wastes will be buried on-site or in a sanitary landfill in accordance with local regulations, fencing to restrict access to ponded water by wildlife.* *(2) Restoring disturbed areas after completing the construction of the project. Temporary buildings will be removed after construction, excavated topsoil will be replaced to its original depth.* **Requirement:** New Mexico Air Quality Control Regulation (AQCR) (Ref. 17).	FEIS, Vol. 1, p. 9-114	DOE-WPO

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-6b	Construction activities were carried out such that the commitments have been met. Any future construction activities will meet similar design and construction commitments. Construction specifications will be on an individual basis and will contain provisions to ensure that the commitment is met.	1	Completed

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-6c	**Commitment:** *The reduction of pollution consists of four general parts:* *1) <u>Water Pollution:</u> During site preparation and the early phases of construction, chemical toilets will be provided for sanitary waste. Once the sewage-treatment plant is completed, sanitary-waste effluents will undergo secondary treatment to meet State of New Mexico standards. The DOE has considered the use of impermeable liners beneath the salt pile and the spoils-pile area to minimize the potential for contaminating groundwater with salt.* *2) <u>Air Pollution:</u> Construction-related air pollution will generally be limited to the immediate area of the site. The largest source of airborne pollutants will be the handling and transfer of soil, producing fugitive dust.* *3. <u>Solid and Chemical Wastes:</u> During construction, litter will be controlled by the use of trash and scrap containers. The trash and scrap will be removed to an approved disposal area or to an approved sanitary landfill. All lubricants and other chemicals used during construction will be stored in approved standard containers with precautions against accidental spills or leakage. All fuels will be stored in conformance with applicable National Fire Protection Association [Ref. 18] and local codes. Waste chemicals and oils will be collected in approved and clearly marked standard containers. The containers will be stored separately from other waste and removed from the site for reprocessing or disposal in an acceptable manner.* *4) <u>Noise:</u> The highest noise levels will occur in daytime during site preparation and excavation. The impacts of noise will be reduced by using equipment that meets the EPA noise-emission guidelines.* **Requirements:** 1) New Mexico Water Quality Control Regulations (Ref. 19) 2) New Mexico Air Quality Control Regulations 3) 40 CFR Parts 260 & 261 (Ref. 20), New Mexico Solid Waste Management Regulations (Ref. 21), New Mexico Hazardous Waste Regulations (Ref. 22) 4) 30 CFR 48, 29 CFR 1910	FEIS, Vol. 1, p. 9-115, p. 9-116	DOE-WPO

TABLE -1 (continued)

No.		Mitigation Implementation	* Priority	Status
FR-6c	1)	Effluents from temporary chemical toilets were removed from the site for proper treatment and disposal. The sewage lagoon treatment facility was constructed in 1984 and provides secondary treatment of sewage effluent to meet New Mexico standards. Lack of shallow ground water at the site precludes the need for liners under the spoil and salt piles. Evaporative collection basins contain stormwater runoff from the spoil and salt piles.	1	Completed
	2)	Fugitive dust emissions were reduced by the paving of permanent roadways and the use of water and binders to reduce fugitive dust during construction. Water sprays and drilling fluids reduced dust from mining,drilling, and crushing activities.		
	3)	A construction landfill was completed in 1987. After excavation, solid wastes were layered with dirt to control pests and were sprayed to control dust. Waste lubricants and other waste chemicals were removed from the site and recycled or disposed of at off-site disposal sites for hazardous or nonhazardous wastes, as required.		
	4)	Noise was controlled during construction by the use of mufflers, sound screens, and engineering controls.		

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-6d	**Commitment:** *The WIPP will be operated in accordance with DOE procedures that limit the amount of radioactive material released during normal operations and under accident conditions. Radiation monitors will be used to activate a system whereby the disposal-exhaust air will be diverted to high efficiency particulate air (HEPA) filters if an accident releases radioactivity underground.* **Requirements:** 40 CFR 191 (Ref. 23), 40 CFR 61 (Ref. 24), and DOE Order 5400.5 (Ref. 25)	FEIS, Vol. 1, p. 9-117	DOE-WPO
FR-6e	**Commitment:** *Before any construction is started, the DOE will consult with the New Mexico Historic Preservation Officer and the Advisory Council on Historic Preservation to identify any eligible properties in addition to those already known, to request a determination of effect, and to implement consultation to mitigate or minimize any adverse effects, as required by the National Historic Preservation Act [Ref. 26].* **Requirement:** 16 U.S.C. 470	FEIS, Vol. 1, p. 9-117	DOE-WPO
FR-6f	**Commitment:** *DOE will allow deviated drilling from outside control zone IV or by vertical and deviated drilling within control zone IV for access to hydrocarbon resources.*		
FR-6g	**Commitment:** *The potash reserves below control zone IV may be mined by the techniques presently employed in the Carlsbad Potash District.*	FEIS, Vol. 1, p. 9-118	DOE-WPO
FR-6h	**Commitment:** *The DOE will prepare for the WIPP an emergency-preparedness plan that will include working with potential carriers, State officials, and local officials.* **Requirement:** WIPP Emergency Plan and Procedures Manual 12-9 (Ref. 29)	FEIS, Vol. 1, p. 9-121	DOE-WPO, WID
FR-6i	**Commitment:** *The emergency-preparedness plan will also be concerned with responding to accidents, both radiological and nonradiological, at the WIPP site itself.* **Requirement:** WIPP Emergency Plan and Procedures Manual 12-9	FEIS, Vol. 1, p. 9-121	DOE-WPO, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-6d	Radiation monitors/HEPA filters installation completed. This monitoring involves the use of Continuous Air Monitoring (CAMs) in waste handling and emplacement areas. Exhaust air from the Waste Handling Building is monitored by Station B Monitoring System and continuously filtered by HEPA filters. Underground exhaust air is monitored by the Station A Monitoring System and diverted to HEPA filters in the Exhaust Filtration Building in the event of a release.	1	System installation and procedures complete, monitoring on-going
FR-6e	Consultation with appropriate state officials was conducted. A report was issued providing concurrence with WIPP construction plans.	1	Consultation and plans completed in 1981
FR-6f	This policy has been changed due to requirements contained in current draft land withdrawal bills, the Conditional No-Migration Determination (Ref. 27) and the Agreement for Consultation and Cooperation between the DOE and the State of New Mexico (Ref. 28). The BLM, in cooperation with the DOE, must be consulted prior to any drilling.	1	Agreement completed 1981
FR-6g	This policy has been changed due to requirements contained in current draft land withdrawal bills, the Conditional No-Migration Determination and the Agreement for Consultation and Cooperation between the DOE and the State of New Mexico. The BLM, in cooperation with the DOE, must be consulted prior to any exploration.	1	Agreement completed 1981
FR-6h	The DOE will conduct First Responder Training for those transportation corridor states through which Test Phase wastes will be transported prior to the shipment of waste. The Dawn Enterprises Management Plan for DOE Contract (Dawn Management Plan) (Ref. 30) addresses emergency preparedness responsibilities for the contract carrier.	1	Plans, procedures, and training completed for the Test Phase.
FR-6i	The DOE has completed an Emergency Preparedness Plan (Ref. 31) addressing both radiological and non-radiological accident scenarios.	1	Plans, procedures, and training completed for the Test Phase.

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-7	**Commitment:** *In addition to the active mitigation measures to be taken, the monitoring activities described in Section 2, Appendix J of the FEIS will be implemented.*	FEIS ROD	DOE-WPO
J.2 Proposed Operational Monitoring Programs			
FR-7a	**Commitment:** *Geologic mapping of stratigraphic units and structural features (core sampling, radar sounding) will be conducted regularly during sinking of shafts and drifts; deformation gauges will be installed and monitored regularly; bulk salt samples from the waste-storage and experiment rooms will be analyzed to determine the chemical makeup, brine content, mechanical properties, and thermal properties; and continuous monitoring of seismic activity will be conducted near the surface.* **Requirement:** Consultation and Cooperation Agreement between DOE and the State of New Mexico, 1981	FEIS, Vol. 2, p. J-28	DOE-WPO, SNL, WID
FR-7b	**Commitment:** *The hydrologic program is expected to extend well beyond the operation lifetime of the WIPP. Surface hydrology will be defined in terms of major components that contribute to surface flows and water quality. Water balances in critical areas will be investigated, and measurement programs for spring flows, potash effluent, and other surface runoff will be carried out.* *It is expected that groundwater sampling for the long-term monitoring will be performed on an annual basis. However, after mining for the WIPP has started, sampling will be performed quarterly until conditions stabilize.* **Requirement:** DOE Order 5400.1 (Ref. 36)	FEIS, Vol. 2, p. J-29	DOE-WPO, WID
FR-7c	**Commitment:** *The operational meteorological monitoring program will be written very much like the preoperational program. Measurements will continue to be taken at the permanently established monitoring station.* **Requirement:** DOE Order 5400.1	FEIS, Vol. 2, p. J-30	DOE-WPO, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-7	Mitigation actions described in Section 2, Appendix J, of the FEIS are described in detail in commitments FR-7a thru FR-7f.	1	Completed
FR-7a	During the sinking of shafts and during the mining of access drifts, experimental rooms, and waste storage panels, a detailed stratigraphic mapping and core sampling program was carried out. Deformation gauges were installed to monitor salt creeping the major haulage and access drifts as well as pillar areas. Bulk samples were analyzed for chemical constituents, brine content, thermal properties, and rock mechanic information. Additionally, seismic activity was monitored from the surface. These data are being utilized to develop mining and ground control plans and to assist in the design of bin-scale experiments. Geologic results are presented in the Brine Sampling and Evaluation Report (annual) (Ref. 32) and the Geotechnical Field Data and Analysis Report (Ref. 33).	1	SPDV geotechnical study program is completed; monitoring and experimental projects are ongoing.
FR-7b	A ground-water sampling program has been established, and is presented in in WP 2-1 (Ground Water Monitoring Program Plan) (Ref. 34). This program currently samples effluents from surface activities in and around the WIPP site that could affect water quality. The effluents from surface runoff is monitored from spring flows and potash mining activities near the site. Results are published annually in the Site Environmental Report in accordance with guidance provided in the Operational Enviornmental Monitoring Plan (OEMP) (Ref. 35).	1	This is an ongoing activity that will extend beyond the life of the WIPP project.
FR-7c	A meteorological monitoring program has been established that is closely modeled after the preoperational monitoring program. The meteorological monitoring program will examine rainfall volumes and frequency and provide wind roses and wind velocity information in order to better characterize the meteorological conditions at the site. Results from this program are published annually in the Site Environmental Report.	1	Monitoring is ongoing.

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
FR-7d	**Commitment:** *The operational air-quality monitoring program is expected to be identical with the preoperational program but the FEIS does not make any commitment other than adequacy to establish whether or not State and Federal air-quality standards are being met.* **Requirement:** DOE Order 5400.1	FEIS, Vol. 2, p. J-30DOE-WPO, WID	
FR-7e	**Commitment:** *The program will document the ecological effects of construction and operation. Sampling will follow those presented during the preoperational biological monitoring program. Information generated will be published in recognized profession journals and presented at appropriate meeting and symposia. In addition, all work will receive independent review.* **Requirement:** DOE Order 5400.1	FEIS, Vol. 2, p. J-30	DOE-WPO, WID
FR-7f	**Commitment:** *Monitoring will be conducted at all gaseous-exhaust locations and will consist of devices to sample airborne particulate radioactivity. Both alpha and beta-gamma continuous air monitors will be located at all release points All systems will be designed to withstand the effects of a design-basis earthquake and will be supplied with emergency power.* *After the WIPP begins operating, a program for monitoring environmental radiation levels will be operated continuously in order to verify projected or expected radioactivity concentrations and related public exposures in accordance with ERDA Manual Chapter 0513. The equipment used will meet or exceed the sensitivities required to detect radiation levels below the limits described in 10 CFR 20, Appendix B [Ref. 37].* *Annual reports will summarize the environmental-sampling monitoring. These reports will provide applicable data in the format required by ERDA Manual Chapter 0513 and include the results of environmental activities and assessments of observed environmental impacts.* **Requirement:** DOE Order 5400.1	FEIS, Vol. 2, p. J-32	DOE-WPO, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-7d	The preoperational air monitoring program will continue to provide baseline air monitoring data during the Test Phase. Baseline data are being used to demonstrate continued compliance with State and Federal air quality standards. The results of ongoing baseline studies can be found in the annual Site Environmental Report.	1	Program plan and procedures completed; monitoring is ongoing.
FR-7e	Ecological monitoring programs are underway at the WIPP. Ecological study programs include raptor, vegetative, mammal, bird, and invertebrate studies. These studies will continue into the Test Phase and will be published in the annual WIPP Environmental Monitoring. The results of selected studies will continue to be published in professional journals and presented at appropriate symposia. All published work will continue to receive independent review.	1	Program plans and procedures are completed, and monitoring activity is ongoing.
FR-7f	Continuous alpha and beta-gamma air moniters are in place and operating to sample all exhaust effluent from waste handling areas at the WIPP. This includes the Station A monitoring system, which moniters emissions from the WIPP underground, and Station B, which monitors exhaust from the Waste Handling Building. These systems have individual uninterruptable power supplies with emergency battery back-up power. The emission monitoring system structurally meet the requirement to withstand the effects of a design-basis earthquake. The ERDA manual chapter has been superseded by DOE Order 5400.1. To date, the required annual reports have been issued, the reports will continue to be issued throughout the WIPP life. The off-site environmental radiation monitoring program has been collecting data since 1985. Analysis of airborne particulates collected from seven continuous samplers around the WIPP site is presented in the baseline database for the annual Site Environmental Report. Baseline data collected will be compared to data generated during Test Phase sampling to analyze potential exposure to the public and the surrounding environment.	1	Monitoring is ongoing.

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
J.3 Postoperational Monitoring Programs			
FR-8	**Commitment:** *DOE also intends to implement the Postoperational Monitoring Program described in Section J-3 of the FEIS.* **Requirement:** 40 CFR 265 (Ref. 38)	FEIS ROD	WID,
NEPA Compliance (NC)			
NC-1	**Commitment:** *Prior to a decision on whether to proceed to the Disposal Phase, the DOE will issue a second SEIS. The second Supplemental EIS will analyze the long-term performance of the WIPP in light of information generated during the Test Phase and will analyze in more detail the impacts of processing and handling TRU waste at each of the generator/storage facilities for shipment to the WIPP for disposal, including the impacts of any proposed waste treatment.* **Requirements:** 40 CFR 1500-1508, DOE Order 5440.1D	SEIS ROD	DOE-WPO
NC-2	**Commitment:** *The need for additional NEPA documentation will be evaluated during the Test Phase.* **Requirement:** DOE Order 5440.1D	SEIS ROD	DOE-WPO, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
FR-8	Three kinds of post-decommissioning monitoring appear to be appropriate. 1) Geologic monitoring is primarily concerned with detecting variations in geologic parameters that may reveal a release of radioactivity. 2) Hydrologic monitoring will continue. 3) Radiation monitoring will include measurements of activity levels in biological indicator species. The RCRA Part B Permit Application (Ref. 39) completed in February 1991 addresses closure and post closure plans for the WIPP site.	4	Program Plans Completed, RCRA Part B Permit Application submitted on 2/26/91
NC-1	Prior to a decision on whether to proceed to the Disposal Phase, the DOE will issue a second Supplement EIS which will analyze the long-term performance of the WIPP. This supplement will analyze impacts of processing and handling TRU wastes at each of the generator/storage sites and examine proposed waste treatment requirements, possible engineering alternatives, and other information generated during Test Phase activities.	2	Prior to Disposal Phase, the DOE will issue a second SEIS.
NC-2	Recommendations for categorical exclusions, supplement analysis, environmental assessments, or environmental impact statements will be prepared for projects and activities as needed and submitted to DOE for their review and decisions.	1,2,3	Ongoing

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
Regulatory Compliance (RC)			
RC-1	Commitment: *The DOE is committed to complying with all applicable State and Federal environmental requirements and to evaluating further the potential mitigation measures described in Section 6 of the Supplement.* *Major State Requirements*: New Mexico Environmental Improvement Act (Ref.40) New Mexico Air Quality Control Regulations (Ref. 17) New Mexico Air Quality Control Act (Ref. 41) New Mexico Water Quality Act (Ref. 42) New Mexico Water Quality Regulations (Ref. 19) New Mexico Water Quality Standards (Ref. 43) New Mexico Hazardous Waste Act (Ref. 44) New Mexico Hazardous Waste Feasibility Study Act (Ref. 45) New Mexico Solid Waste Management Regulations (Ref. 21) New Mexico Hazardous Waste Management Regulations (Ref.22) New Mexico Underground Storage Tank Regulations (Ref. 46) New Mexico Solid Waste Acts (Ref. 47) *Major Federal Requirements*: Occupational Safety and Health Administration (OSHA) (29 CFR 1910 series) (Ref. 14) Mining Safety and Health Administration (MSHA) (30 CFR 48-49) (Ref. 15) Resource Conservation and Recovery Act (RCRA) (40 CFR 260-280) (Ref. 48) Radiation Protection Standards (40 CFR 191) (Ref. 23) National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 61) (Ref. 24) Clean Air Act (42 USC 7401) (Ref. 49) Clean Water Act (33 USC 1251) (Ref. 50) Safe Drinking Water Act (42 USC 300f) (Ref. 51) National Environmental Policy Act (NEPA) (40 CFR 1500-1508) (Ref. 52) National Historic Preservation Act (16 USC 470f) (Ref. 53) Endangered Species Act (50 CFR 17) (Ref. 54) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments Reauthorization Act (SARA) (Ref. 55) Toxic Substance Control Act (TSCA) (15 USC 2601) (Ref. 56)	SEIS ROD	WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-1	New and revised regulations are reviewed as they are published in the Federal Register so that a proactive approach may be taken to comply with them. Audits and inspections, internal and external, are performed periodically.	1, 2	Ongoing
	The report Review of WIPP Operations for Compliance with New Mexico Environmental Regulations (Ref. 57) indicates that "no findings were identified through this review of state environmental regulations."	1	Complete on 6/6/91
	State of New Mexico permits acquired to date include: • Food or drink purveyor permit for cafeteria • Registration of underground storage tanks • Permit to collect biological samples • Concurrence that construction of WIPP will have no significant adverse impact upon threatened or endangered species • Right-of-way for high volume air sampler	1	Completed
	BLM permits acquired to date: • Approval to drill two new test wells • Right-of-way for water pipeline • Right-of-way for north access road • Right-of-way for railroad • Right-of-way for dosimetry/aerosol sampling site • Right-of-way for subsidence monuments • Right-of-way for raptor nesting platforms • Right-of-way for monument installation • Right-of-way for security fence installation	1	Completed
	The RCRA Compliance Plan (Ref. 58) has been prepared to identify specific requirements (procedures, plans, etc.) for compliance with RCRA; these required documents are complete or are being prepared.	1, 2	Completed on 8/2/91
	The No-Migration Variance Petition (Ref. 59) for the WIPP project was submitted to the EPA and served as the basis for EPA's "Proposed Conditional No-Migration Variance" (Ref. 60) published in the Federal Register on April 6, 1990. The EPA later issued final conditions for the WIPP Test Phase in the "Conditional No-Migration Determination" published in the Federal Register on November 14, 1990. WIPP is actively addressing compliance with the EPA Environmental Radiation Protection Standards (40 CFR 191, Subparts A & B). Standards in Subpart A has been temporarily replaced by the more stringent NESHAPs reporting requirements (40 CFR 61). The NESHAPs data package (Ref. 61), which estimates radioactive emissions from routine operations during the Test Phase, has been	1	Completed on 11/14/90

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
	Major Federal Requirements (cont.):	SEIS ROD	WID
RC-1 (cont.)	Federal Land Policy Management Act (FLPMA) (16 USC 1701) (Ref. 62) Hazardous Material Transportation Act (HMTA) (49 CFR 100-199) (Ref. 63) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (40 CFR 152-181) (Ref. 64) RELEVANT DOE ORDERS DOE 5400.1 General environmental program (Ref. 36) DOE 5400.5 Radiation protection of the environment (Ref. 25) DOE 5440.1D NEPA (Ref. 1) DOE 5480.11 Radiation protection (Ref. 65) DOE 5820.2A Radioactive waste management (Ref. 66) DOE-AL 5820.2 Radioactive waste (Ref. 67) RELEVANT SECRETARY OF ENERGY NOTICES (SENs) DOE SEN-15-90 NEPA (Ref. 9)		

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-1 (cont.)	prepared and was submitted to the EPA on February 19, 1991. A letter has been prepared to notify the EPA of startup within 30 to 60 days of startup as required under NESHAPs. Another letter will be sent to EPA notifying them of the startup within 15 days of the actual startup.	1	Neshaps data package completed on 2/19/91, notification of potential start-up provided to EPA on 6/26/91.
	Subpart B of 40 CFR 191 has been remanded to the courts; however, these standards are still being used until new performance assessment standards can be formulated by the EPA.	2,3	Ongoing
	Two planning documents have been developed to set up the methodology and structure of the annual performance assessment required by Subpart B of 40 CFR 191. These documents are:	2	
	• "Performance Assessment Methodology Demonstration: Methodology Development for Evaluating Compliance with EPA 40 CFR 191, Subpart B, for the WIPP" (Ref. 68)		Complete 12/89
	• "Draft Forecast of the Final Report for the Comparison to 40 CFR 191, Subpart B, for the Waste Isolation Pilot Plant" (Ref. 69)		Complete 12/89
	The methodology and information presented in these two documents are then used to prepare two annual reports,		
	• "Data Used in Preliminary Performance Assessment of the Waste Isolation Pilot Plant" (Ref. 70)		Annual report
	• "Preliminary Comparison with 40 CFR 191, Subpart B, for the WIPP." (Ref. 71)		Annual report
	Of these two documents, the first contains the data accumulated during the year, and the second contains the calculations required for the annual performance assessment.		
	The annual WIPP Site Environmental Report and Section K of the RCRA Part B Permit Application also identify applicable Federal and State regulations and specify how compliance is ensured.	1, 2	WIPP Site Environmental Report issued annually, Part B application completed 2/26/91

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
RC-1 (cont.)			
RC-2	**Commitment**: *The DOE is committed...to evaluating further the potential mitigation measures described in Section 6 of the Supplement.*	SEIS ROD	DOE-WPO
Construction, Test and Disposal Phases, and Transportation-Related Mitigation Measures			
RC-2a	**Commitment**: *Measures would be incorporated into all of the activities to minimize the health and safety risks to the workers and the general public.* **Requirements**: *Occupational Safety and Health Administration (29 CFR 1900), Mining Safety and Health Administration (30 CFR 48, 49) and DOE Order 5480.11.*	SEIS, Vol.1, p.6-2	DOE-WPO, WID
RC-2b	**Commitment**: *The routes that the trucking contractor must follow are the preferred routes established under U.S. Department of Transportation (DOT) routing rules for highway route-controlled quantities of radioactive materials.* *Requirement*: 49 CFR 177 (Ref. 75)	SEIS, Vol.1, p.6-4	WID, Contract carrier
RC-2c	**Commitment**: *Each driver must be at least 25 years of age, have logged a minimum of 100,000 miles in a tractor-trailer combination, and have at least 2 years of uninterrupted commercial tractor-trailer driving experience during the past 5 years.* **Requirement**: 49 CFR 177 and 391 (Ref. 77)	SEIS, Vol.1, p.6-3	WID, Contract Carrier

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-1 (cont.)	The WIPP project has prepared numerous site NEPA documents. The NEPA Management Directive is being prepared which will further implement the provisions of DOE order 5440.1D. An overall site-wide NEPA strategy document is being prepared that discusses appropriate levels of documentation for future WIPP site projects.	1, 2	Ongoing
RC-2	Section 6.0 of the WIPP SEIS addresses existing and proposed mitigation measures for the Test and Disposal Phases. Existing mitigation actions pertaining to construction, Test and Disposal Phases, and transportation are listed below in Regulatory Compliance commitments RC-2a thru RC-2j.	1	See Nos. 3-12
	Section 6.3 of the WIPP SEIS discusses long-term facility performance engineering modifications. Modifications are currently in the experimental stages. Results can be obtained from the Evaluation of the Effectiveness and Feasibility of the WIPP Engineered Alternatives: Final Report of the Engineered Alternatives Task Force (Ref. 72), DOE/WIPP 91-007, July 1991. Section 6.4 addresses potential waste treatment technologies for TRU wastes. Further development of these technologies is required before these technologies can be implemented as mitigation measures.	2, 3	
RC-2a	Mitigation measures minimize the health and safety risks to workers and the general public. These measures are implemented through the use of standard operating procedures contained in the WIPP Operational Safety Requirements Administration Plan (Ref. 73) and the WIPP Radiation Safety Manual 12-5 (Ref. 74).	1	Complete
RC-2b	The Dawn Management Plan specifies that the contract carrier will follow interstate highway systems and State-designated preferred routes. Procedures addressing route deviations are included in the Dawn Management Plan as well as WID procedure WP-06-3. (Ref. 76)	1	Complete; plan revised Feb. 1991
RC-2c	The Dawn Management Plan stipulates all driver qualifications for the transport of TRU waste to the WIPP. This plan also discusses driver disciplinary actions, should the need arise.	1	Complete; plan revised Feb. 1991

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
RC-2d	**Commitment:** *A sophisticated tracking and communication system (TRANSCOM) has been developed for monitoring truck movement when transporting waste to the WIPP site. This near-real-time system will operate 24 hours per day, using navigation, telecommunication, and computer network technologies to verify that each tractor-trailer is on the specified route and following the established transportation schedule.*	SEIS, Vol.1, p.6-4	WID
RC-2e	**Commitment:** *During transportation, to increase public confidence and maintain a high level of coordination, an operator at the WIPP Central Coordination Center (CCC) [CMR] will monitor incoming and outgoing shipments 24 hours per day, 7 days a week.*	SEIS, Vol.1, p.6-4	WID
RC-2f	**Commitment:** *The trucking contractor (carrier) would play a key role in mitigating potential transportation accidents or dealing with any accidents that may occur. The contractor will maintain a DOE-approved emergency-response plan, including an itemized list of the emergency equipment carried on the vehicle and will provide all tractors transporting the TRU waste with equipment to be used in the event of a transportation accident.* **Requirement:** DOE Carrier Contract (Ref. 78)	SEIS, Vol.1, p.6-4	Contract carrier

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-2d	The TRANSCOM is an operational transportation communication system that will be used for TRU waste shipments to WIPP. A satellite-based tracking system will be used for each shipment.	1	Complete
RC-2e	The WIPP Central Monitoring Room (CMR) will act as a communication link among WID, DOE, and the contract carrier for all TRU waste shipments to the WIPP.	1	Complete
RC-2f	A section of the Dawn Management Plan details the contract carrier's emergency response actions in the event of a transportation accident. Accident notifications will be made through the communication link with the WIPP CMR.	1	Complete

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
RC-2g	**Commitment:** *At the heart of the safety system mitigating the effects of a potential accident are the NRC-certified Type B containers that will be used to transport TRU waste. For RH TRU waste, the NuPac 72B will meet NRC testing requirements and be certified before it will be used to transport waste.* **Requirement:** 10 CFR 71 (Ref. 79)	SEIS, Vol.1, p.6-5	WID
RC-2h	**Commitment:** *[With regard to the 72B cask and the TRUPACT-II container:]* *1) The containers will be manufactured conforming to DOE design specifications and the manufacturers' quality control program for raw materials, purchased subcomponents, and fabrication and assembly. The full manufacturing process is auditable by the DOE.* *2) Following manufacture, the containers will be inspected and approved for use by the DOE, following established criteria. Each container will be inspected following established procedures before being loaded.* *3) All maintenance performed on the containers will be conducted by trained and certified personnel following approved procedures.* **Requirements:** NuPac Quality Assurance Program Plan (Ref. 81), TRUPACT II Users Requirements Document (Ref. 82).	SEIS, Vol.1, p.6-5	DOE-WPO,NuPac Incorporated, DOE generator/ storage sites, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-2g	For CH TRU waste, the TRUPACT-II received its Certificate of Compliance (Ref. 78) from the NRC on August 30, 1989.	1	Complete
	The NuPac 72B cask that could be used for the shipment of RH TRU waste is still in the design phase. It will be issued a Certificate of Compliance from the NRC prior to shipping RH TRU waste to the WIPP.	3	In final design phase
RC-2h	The NuPac 72B cask, to be used for shipping RH TRU waste, is in the design phase. The manufacturing quality control program, inspection criteria and maintenance procedures are pending. The 72B cask will be manufactured to the NRC approved design, and used and maintained per the NRC Certificate of Compliance. Pertaining to the TRUPACT-II container: • Elements of conformance to design specifications, the manufacturer's Quality Control Program, as well as fabrication and assembly are contained in a NRC approved Quality Assurance Program entitled Pacific Nuclear Systems Incorporated Quality Assurance Manual (Ref. 83). This Quality Assurance Program was approved per U.S. Nuclear Regulatory Commission quality assurance program approval for radioactive material packages, approval number 0192, Rev. 3, Docket number 71-0192, dated 9/25/90. • The TRUPACT-II containers are inspected by the DOE to the NRC approved design during hold and inspection points during manufacture and before final acceptance. • All maintenance performed on the TRUPACT-II containers at the WIPP is by trained and certified personnel per WIPP Procedure WP 13-4 Waste Isolation Division Quality Assurance Plan for the Transpotation and Receipt of Transuranic (TRU) Waste (Ref. 84). Generator sites have a DOE approved quality assurance program that is equivalent to 10 CFR 71, Subpart H, quality assurance requirements for packaging. Personnel who perform maintenance are trained and certified for those elements of maintenance requiring certification.	1	Complete

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
RC-2i	**Commitment**: *All waste to be shipped to the WIPP will be certified to meet both the WIPP Waste Acceptance Criteria (WAC) and the Nuclear Regulatory Commission's (NRC) transportation criteria. These criteria have been developed in part to limit the spread of contamination in the event of a breached container, thereby mitigating the effects of an accident. All DOE and contractor personnel involved in the container inspection, waste handling certification, loading and TRUPACT-II operations will be trained and certified in their job duties and must follow approved procedures. All activities will receive day-to-day oversight by a designated Site Certification Official and are subject to audit by the DOE.* **Requirements**: WIPP/DOE 89-069, Waste Acceptance Criteria (Ref. 85)	SEIS, Vol.1, p.6-5	DOE generator/ storage Sites
RC-2j	**Commitment**: *While State, Tribal, and local authorities are responsible for initial response and command and control at accidents, the DOE, as owner and shipper will be present at the scene to assess the damage, to determine whether any release of radioactive material has occurred, and to help the State and local authorities promptly inform the public about the situation. In the unlikely event that a release of radioactive material has occurred, the DOE will collect the TRU waste and any debris; decontaminate soil, vehicles, and persons as needed; reload the TRU waste into new shipping containers; and return the site of the accident to normal use.* **Requirement**: DOE Emergency Response Plan	SEIS, Vol.1, p.6-7	DOE-WPO, WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-2i	The DOE furnishes all DOE generator/storage sites with waste characterization guidance in the WIPP Waste Acceptance Criteria (WAC), the Waste Characterization Program Plan (Ref. 86) (WCPP), the Guidance Manual for Preparation of Waste Profile Plans (Ref. 87), and the Quality Assurance Program Plan(Ref. 88) (QAPP). This guidance addresses container inspection, operator training, and certification. Each DOE generator/storage site prepares a Certification Plan, a site-specific Quality Assurance Project Plan (QAPjP) in response to this guidance and a TRUPACT-II Acceptable Methods for Payload Compliance (TRAMPAC). Each site is then audited by the WACCC to ensure that programs are in place and will adequately characterize the waste for transportation and regulatory requirements.	1	Complete
RC-2j	In the event of a transportation accident involving TRU waste shipments to the WIPP, the CMR will notify the nearest DOE Emergency Operations Center (EOC). The EOC will determine if a DOE representative is required at the scene of the accident.	1	Procedures complete

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
RC-3	**Commitment:** *The DOE will continue to work with and solicit the input of State and Federal agencies, national scientific groups, and other review groups with regard to the operation of the WIPP.*	SEIS ROD	DOE-WPO
Transportation (TR)			
TR-1	**Commitment:** *The DOE also will be conducting further studies with regard to the use of rail transport for TRU waste.*	SEIS ROD	WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
RC-3	The DOE continues to work with and solicits the input of state and federal agencies, national scientific groups, and other review groups with regard to the operation of the WIPP as follows: • State Agency input is provided for in the various agreements between the DOE and the State via Consultation and Cooperation Agreements. • Federal Agency input is received from the EPA (No-Migration Determination), NRC (TRUPACT-II Certification), etc., on an as-needed basis. • Bi-monthly meetings are held with the WIPP Panel of the National Academy of Scientists/National Research Council. • Meetings are held with EEG, NMED, DOE, SNL, and WID quarterly and as needed. • Meetings with other review groups (ACNFS, DNFSB, etc.) are held as requested.	1,2,3,4	Ongoing
TR-1	The DOE has chosen to use truck transport for the Test Phase. The current NRC certification for TRUPACT-II containers does not apply to rail transport. During the Test Phase, the DOE will perform cost/benefit and safety evaluations in order to reach a decision on the possible utilization of rail transport for the full-scale Disposal Phase at the WIPP.	3	Further studies on the use of rail transport will be performed during the Test Phase.

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
Test Phase (TP)			
TP-1	**Commitment**: *Before proceeding with the Test Phase, the institutional and technical prerequisites listed in the Secretary's Decision Plan for the WIPP must be satisfactorily completed. Examples of those prerequisites include land withdrawal, a final decision by EPA on the RCRA No-Migration Petition for the purposes of testing and experimentation, and completion of the Final Safety Analysis Report (FSAR) [Ref.89] and an FSAR Addendum that specifically analyzes safety at the WIPP during the Test Phase.*	SEIS ROD	DOE-WPO, WID
TP-2	**Commitment**: *This Test Phase will involve emplacing, in a fully retrievable manner, a limited quantity of TRU waste underground at the WIPP to conduct tests designed to collect data to reduce uncertainties associated with performance assessment predictions that are necessary to determine whether WIPP would comply with Environmental Protection Agency (EPA) disposal standards.* **Requirement**: Conditional No-Migration Determination	SEIS ROD	DOE-WPO
TP-3	**Commitment**: *Waste emplaced during the Test Phase will be kept to the minimum quantities needed to support the purposes of the Test Phase.* **Requirements**: Conditional No-Migration Determination, Federal Register, November 14, 1990	SEIS ROD	DOE-WPO

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
TP-1	Before proceeding with the Test Phase, the institutional and technical requirements detailed in the Secretary of Energy's Decision Plan for the WIPP will be satisfactorily completed. Many of these documents, procedures, and actions have already been completed. The EPA issued the Conditional No-Migration Determination on November 14, 1990. The Final Safety Analysis Report (FSAR) was approved in May of 1990 (WP 02-9). The final approval of a FSAR Addendum is expected in July 1991. Activities that are ongoing and must be completed prior to the receipt of wastes include the Integrated Systems Checkout (ISC), EM-Operational Readiness Review, completion of the WIPP land withdrawal, and verification that the INEL is ready to ship wastes.	1	Completed, 11/14/90 and 5/90. Other requirements to be completed prior to the receipt of wastes for the Test Phase.
TP-2	The Test Phase will involve the emplacement of wastes in a fully retrievable manner to comply with the EPA's Conditional No-Migration Determination. Performance Assessment will be used to support compliance with EPA disposal standards found in 40 CFR 191, Part B, and 40 CFR 268 (Ref. 90).	2	Ongoing
TP-3	The Conditional No-Migration Determination states that the waste emplaced during the Test Phase will be limited to 8500 barrels or 1 percent of the total facility capacity (Federal Register Vol. 55., No. 220).	1,2	Completed; Ongoing

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
TP-4	**Commitment:** *Based on a reevaluation of the proposed Operations Demonstration, the DOE has decided that a decision on whether to proceed with an Operations Demonstration as part of the Test Phase should not be made until a high-level of confidence in complying with the EPA disposal standards has been achieved and a determination is made that additional operational experience with waste is required. The following activities must be completed before DOE can make a decision on the scope of the Operations Demonstration program (i.e., a determination of whether additional operational experience with waste is required:* *(1) An evaluation of the feasibility of the EPA recommendation of monitoring the facility performance by emplacing waste (approximately 1.5 percent of design capacity) in two full-scale, instrumented, backfilled, sealed rooms after a satisfactory demonstration of retrieval using simulated waste;* *(2) Establishment of systems objectives and criteria for evaluating disposal operations readiness; and* *(3) A preliminary report is issued on operational experience gained from the handling and emplacement of TRU waste for the performance assessment tests and an assessment of this experience relative to the pre-established system objectives and criteria for WIPP disposal operations readiness.* **Requirement:** Conditional No-Migration Determination, Federal Register vol. 55, no. 220, November 14, 1990	SEIS ROD	DOE

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
TP-4	The EPA has stipulated as part of the Conditional No-Migration Determination (NMD) that no operational demonstration will be conducted during the Test Phase.	3	Ongoing
	Based on the results of the Test Phase, an operational demonstration may be required to determine if additional waste handling experience is required prior to beginning the Disposal Phase.	2	Complete
	The EPA's Conditional No-Migration Determination limits the amount of waste to be emplaced to 8500 drums, or 1% of the total capacity of the facility.	2	Ongoing

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
Emergency Response (ER)			
ER-1	**Commitment:** *The DOE will work with all States through which waste will be transported to establish comprehensive training programs for emergency response personnel.*	SEIS ROD	DOE-WPO,WID

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
ER-1	The WPO has coordinated with twelve corridor states, which includes all states involved during the Test Phase shipments, to establish a comprehensive emergency responder training program called the States Training and Education Program (STEP). The courses have been given to responsible parties in the corridor shipping states. Parties in states where the shipments originate have also been provided with training. The training program is an ongoing activity. Training and refresher courses will be offered and conducted as the need arises or as requested. As of February 28, 1991, the courses have been taught 284 times with 6158 attendees. The courses have been held in 20 states. The following courses are offered in STEP training: 1. *First Responder Course*. This is an eight-hour class that provides an overview of the WIPP basic radiation and radiation protection principles, transportation regulations, transportation packages, satellite tracking systems (TRANSCOM), and DOE emergency response. 2. *First Responder Refresher Course*. This is a four-hour course offered to those personnel in the states of Idaho, Utah, Wyoming, New Mexico, and Colorado who have attended the First Responder Course. 3. *Command and Control Course*. This is a two-day course intended for individuals who may be in command at the scene of a transportation accident involving TRU waste. 4. *Mitigation Course*. This is a four-hour course intended for state radiological health and environmental professionals who may perform radiological monitoring, make mitigative action decisions, or perform environmental restoration activities associated with a transportation accident involving TRU waste.	1, 2	Initial training completed; Additional training ongoin

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TABLE - 1 MITIGATION ACTIONS

No.	Commitment	Reference	Work Performed by
ER-1 (cont.)			

TABLE -1 (continued)

No.	Mitigation Implementation	* Priority	Status
ER-1 (cont.)	5. *Train-the-Trainer Program*. This is a 12-hour course intended for individuals currently certified to train law enforcement, fire, or emergency medical personnel within the state, tribal, or local jurisdiction.	1	Initial training completed; Additional training ongoing
	6. *Medical Management of Radiation Accidents.* This 8-hour on-location course, which was developed and is conducted through the Radiation Emergency Assistance Center/Training Site (REAC/TS), is a generic presentation for physicians, nurses, health/medical physicists, and lab technicians who may treat victims who have been exposed to radiation and/or contaminated with radioactive materials. Health physicists in nearby areas are also invited to attend. The techniques presented are also applicable to TRU waste.		

* Priority codes - To be implemented: (1) prior to receipt of waste, (2) during the Test Phase, (3) for the Disposal Phase, (4) for Closure

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APPENDIX A

RECORD OF DECISION TO THE
FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)

<u>Federal Register</u> 46 (18), pp. 9162 - 9164
Dated January 28, 1981

DEPARTMENT OF ENERGY

Waste Isolation Pilot Plant (WIPP); Record of Decision

This Record of Decision has been prepared on the Waste Isolation Pilot Plant (WIPP) Project pursuant to Regulations of the Council on Environmental Quality, 40 CFR 1505.

Decision

The U.S. Department of Energy (DOE) has decided to proceed with the WIPP project at the Los Medanos Site in the Delaware Basin of southeast New Mexico as directed by the U.S. Congress in Public Law 96-164 "Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980". The WIPP project, which is described as Alternative 2 in the Final Environmental Impact Statement (FEIS), DOE/EIS-0026, October, 1980, will be developed "as a defense activity of the DOE for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States" Public Law 96-164. Construction of permanent surface and underground facilities will proceed on a phased basis consistent with the evaluation of data obtained during the Site and Preliminary Design Validation (SPDV) program as defined in the FEIS. If significant new environmental data results from the SPDV program or other WIPP project activities, the FEIS will be supplemented as appropriate to reflect such data, and this decision to proceed with phased construction and operation of th WIPP facility will be reexamined in the light of that supplemental National Environmental Policy Act (NEPA) review.

The WIPP facility will dispose of defense transuranic (TRU) waste stored retrievably at the Idaho National Engineering Laboratory (INEL). By approximately 1990 all existing waste stored at INEL will have been removed to WIPP, and the WIPP facility would be in a position to receive and dispose of TRU waste from other defense waste generating facilities. In addition, WIPP will include an experimental facility for conducting experiments on defense wastes, including small volumes of defense high-level waste. The high-level waste used for experiments will be retrieved and removed from the site prior to decommissioning of the WIPP facility.

Description of Alternatives

The following alternatives were considered by the DOE for demonstrating the safe disposal of TRU waste resulting from United States defense programs that is currently stored or planned for storage at INEL:

Alternative 1

This no action alternative would permit the TRU waste presently stored in a retrievable fashion at the INEL to remain there in surface storage for an indeterminate period; waste would continue to be shipped there and held in storage throughout the same indeterminate period. No action would be taken at the Los Medanos Site or any other site relative to demonstrating the safe disposal of TRU waste from defense programs.

Alternative 2

This alternative involves the development of the authorized WIPP facility, consisting of both surface and underground facilities at the Los Medanos site in southeast New Mexico, designed to retrievably emplace approximately 6.2 million cubic feet of contact-handled TRU waste and as much as 250,000 cubic feet of remotely handled TRU waste in a mined repository. This facility also would include a 20 acre underground area for short-term experiments on all types of radioactive defense wastes to answer technical questions about the potential disposal of waste, particularly high-level waste, in salt. All the high-level waste used for the research would be removed at the completion of the experiments.

In order to provide final site validation and to verify the analyses used in the design of the underground facility, the construction of the WIPP facility would be preceded by the construction of two deep shafts and an underground geological experimentation facility at the Los Medanos site. The shafts and underground area would be instrumented to measure rock response and various non-radioactive experiments conducted to observe waste-package performance under repository conditions. If significant new environmental data results from these site and design validation activities (or other WIPP project activities), the FEIS will be supplemented as appropriate by a further NEPA review and the decision to proceed with phased construction and operation of the WIPP facility will be reexamined in the light of that supplemental NEPA review.

Alternative 3

This alternative consists of the disposal of stored INEL TRU waste in the first available repository for high-level radioactive waste. In this alternative there would be no separate facility for demonstration of the safe disposal of defense TRU waste. A number of potential sites for repositories for both TRU waste and high-level waste would be located, characterized and evaluated in accordance with the procedure and schedule outlined in the DOE Statement of Position in the Nuclear Regulatory Commission Waste Confidence Rulemaking, PR 50, 51 (44 FR 61372). In this alternative, defense TRU waste would remain stored in a retrievable fashion at the INEL until the first high-level waste repository becomes available in the period now scheduled between 1997 and 2006.

Alternative 4

This alternative involves selection of a WIPP facility but the decision on the site for such a facility would be delayed until at least 1984 when two or three sites in addition to the Los Medanos site should be available for detailed consideration. During the evaluation of additional sites, TRU waste would remain in retrievable storage at the INEL. Additional sites in salt domes and basalt would be examined as potential facility locations.

Additional Alternatives

Alternative disposal methods to mined geological disposal for defense TRU waste were also evaluated by DOE and rejected as either impractical or infeasible due to the lack of necessary technology. These alternate disposal methods included emplacement in deep ocean sediments, emplacement in very deep drillholes, transmutation, and ejection into space.

Basis for Decision

In compliance with NEPA, DOE has analyzed the environmental impacts of the authorized WIPP project and alternatives thereto in the FEIS. Comments on the draft statement were considered in preparing the FEIS. Comments on the FEIS are evaluated in WIPP/DOE-81 and were considered in preparation of this Record of Decision.

DOE has determined that the long term impact on the human environment resulting from Alternative 1 (no action) is unacceptable. Leaving the TRU waste in surface storage at the INEL could lead to very high radiation exposures both to individuals and the general population as a result of future volcanic action or human intrusion after government control of the site is lost. There are no suitable geologic environments for disposal of the waste permanently on the INEL site. Consequently, none of the options for leaving the waste at INEL indefinitely are environmentally acceptable.

Alternatives 2, 3 and 4 are each predicted to have environmental impacts that are acceptably small both in the short term during construction and operation and in the more distant future. None of these alternatives is so clearly superior environmentally to the others that it can be identified as environmentally preferable.

Alternative 3 was identified in the FEIS as DOE's preferred alternative. This preference was based on its consistency with the comprehensive radioactive waste management program described in the Presidential Statement of February 12, 1980. Alternative 3 would delay the removal of the INEL stored TRU waste until 1997 at the earliest.

Alternative 4 would result in delay in removal of the stored TRU waste from INEL until 1991 at the earliest. Otherwise, its environmental impacts would be identical to alternative 2 if the Los Medanos site were selected after comparison with other sites for construction of a WIPP-like facility.

In contrast, implementation of Alternative 2 could result in an operational facility by 1987 and thus solve the unacceptable long-term environmental problem of storing TRU waste at INEL in the shortest amount of time and avoid the inflationary costs attributable to dalay in constructing the facility. More importantly, the WIPP project provides an opportunity for an early demonstration of the safe disposal of defense TRU waste and for experimentation on bedded salt as a disposal medium for defense high-level wastes.

The environmental impacts predicted for Alternative 2 are generally small and the Los Medanos site appears acceptable for long-term disposal of TRU waste with minimal risk of any release of radioactivity to the environment. There is no indication that an alternate site for the demonstration would pose reduced risks. Nevertheless, the use of the Los Medanos site in southeastern New Mexico would deny access to 3% to 10% of the known U.S. reserves of the mineral langbeinite for the operating life of the repository and may require controls on its extraction thereafter.

The consequences of extremely unlikely accidents during the transportation of transuranic and high-level waste to the Los Medanos site

could induce moderate radiation exposures and significant decontamination costs, but they would be similar regardless of when or where an experimental facility or combined repository is built. The probabilities and the overall population doses would change depending on the location of the repository, but the radiation doses received by the maximally exposed individual would be the same.

Mitigation

DOE will mitigate adverse impacts of the WIPP project on the quality of the human environment by implementing the proposed mitigation activities as described in Section 9.6 of the FEIS.

In addition to the active mitigation measures to be taken, the monitoring activities described in Section 2, Appendix J of the FEIS will be implemented. Some modifications of these programs may occur based upon data acquired during the Preoperational Environmental programs (Section J.1). DOE also intends to implement the Postoperational Monitoring Program described in Section J.3.

Conclusion

DOE has weighed the benefits of proceeding with the authorized WIPP project against its potential environmental impacts and costs, and after consideration of the benefits, impacts and costs of reasonably available alternatives, has determined to proceed with the phased construction and operation of the authorized WIPP project. Should the SPDV program or any other WIPP project activity result in significant new environmental information, a supplemental NEPA review will be undertaken as appropriate to reflect such information, and this decision to proceed with phased construction and operation will be reexamined in the light of this supplemental NEPA review.

Dated: January 22, 1981.

For the United States Department of Energy.

Duane C. Sewell,

Assistant Secretary for Defense Programs.

FR Doc. 81-3209 Filed 1-27-81; 8:45 am]

BILLING CODE 6450-01-M

Economic Regulatory Administration

Proposed Remedial Orders

Pursuant to 10 CFR 205.192(c), the Economic Regulatory Administration of the Department of Energy hereby gives Notice that the following Proposed Remedial Orders have been issued. These Proposed Remedial Orders allege

APPENDIX B

RECORD OF DECISION TO THE
FINAL SUPPLEMENT ENVIRONMENTAL IMPACT STATEMENT (SEIS)

Federal Register 55 (18), pp. 25689 - 25692
Dated June 22, 1990

DEPARTMENT OF ENERGY

Record of Decision; Waste Isolation Pilot Plant

AGENCY: U.S. Department of Energy (DOE).

ACTION: Record of Decision, Waste Isolation Pilot Plant (WIPP).

SUMMARY: The U.S. Department of Energy (DOE) has decided to continue the phased development of the WIPP to demonstrate the safe disposal of post-1970 transuranic (TRU) waste resulting from the defense activities and programs of the United States by proceeding with the Test Phase. This Test Phase will involve emplacing, in a fully retrievable manner, a limited quantity of TRU waste underground at the WIPP to conduct tests designed to collect data to reduce uncertainties associated with performance assessment predictions that are necessary to determine whether WIPP would comply with Environmental Protection Agency (EPA) disposal standards. Before proceeding with the Test Phase, the prerequisites listed in the Secretary's Decision Plan for WIPP must be satisfactorily completed. The Test Phase also may involve an Operations Demonstration. However, a decision on whether to proceed with an Operations Demonstration as a part of the Test Phase will not be made until, and only if, the DOE has a high level of confidence in complying with the EPA disposal standards for TRU waste, and a determination were made that additional operational experience with waste is required. Prior to a decision on whether to proceed with the Disposal Phase of the WIPP, the DOE will issue another Supplemental Environmental Impact Statement (SEIS). The DOE has prepared this Record of Decision (ROD) pursuant to the regulations of the Council on Environmental Quality (40 CFR part 1505) and the DOE's Guidelines for Compliance with the National Environmental Policy Act (NEPA) (52 FR 47662, December 15, 1987).

FOR FURTHER INFORMATION CONTACT:

For further information on the WIPP, contact:

Mark W. Frei, Office of Environmental Restoration and Waste Management (EM-30), U.S. Department of Energy, Washington, DC 20545, 301/353-9469.

For further information on the NEPA process, contact:

Carol Borgstrom, Office of NEPA Project Assistance (EH-25), U.S. Department of Energy, Washington, DC 20585, 202/586-4600.

Background

The WIPP site is located in Eddy County in southeastern New Mexico. It is 26 miles east of Carlsbad in an area known as Los Medanos ("the dunes"), a relatively flat, sparsely inhabited plateau with little surface water and limited land uses. The land is used mainly for grazing, but other uses in the area include mining for potash, and oil and gas exploration and development.

The WIPP was authorized by Public Law 96–164, the "National Security and Military Applications of Nuclear Energy Act of 1980," to provide a research and development facility for demonstrating the safe disposal of radioactive waste produced by national defense activities. The DOE issued a Final Environmental Impact Statement (FEIS) on the proposed phased development of the WIPP in 1980 (DOE/EIS–0026, October 1980). The DOE's decision to construct the WIPP at a location in southeastern New Mexico was based on the FEIS and was announced in a Record of Decision (ROD) (48 FR 9162, January 28, 1981). The decision called for the phased development of the WIPP for the disposal of post-1970 defense-generated TRU waste. This decision included conducting experiments with small volumes of defense high-level waste. The DOE is no longer planning to conduct high-level waste experiments at the WIPP.

The WIPP is designed to dispose of 6.2 million cubic feet (ft^3) of contact-handled (CH) TRU waste and 250,000 ft^3 of remote-handled (RH) TRU waste in the mined repository over a 25-year operational life. TRU waste, which is waste contaminated with alpha-emitting radionuclides that are heavier than uranium and have half-lives longer than 20 years at concentrations higher than 100 nanocuries per gram or their equivalents, results primarily from defense-related plutonium reprocessing and fabrication, as well as defense-related research and development activities at various DOE facilities. TRU waste is generated and/or stored by 10 DOE defense facilities around the country. The waste exists in a variety of forms ranging from unprocessed laboratory trash (e.g., tools, glassware, and gloves) to solidified sludges from wastewater treatment. A substantial portion (approximately 60 percent) of the post-1970 TRU waste that would be emplaced in WIPP also contains hazardous chemical components. Such TRU waste (i.e., mixed waste) is similar in its physical and radiological characteristics to TRU waste that does not contain these components.

The WIPP includes surface and underground facilities that will support the emplacement of TRU waste in a geologic repository. The major construction activities at the WIPP are nearly complete; surface facilities are essentially complete, and most of the underground rooms for experimentation and for initial waste emplacement have been excavated. The principal surface structure at the WIPP is the Waste Handling Building, in which TRU waste will be received, inspected, and moved to a shaft for transfer underground. The building also contains change rooms, a health-physical laboratory, and equipment for ventilation and filtration. Other surface facilities include a fire and domestic water pumphouse, a sewage-treatment plant, a building for safety and emergency services, a guard and security building, and support buildings. The constructed underground facilities include four shafts, the first panel of the waste disposal area, an experimental area, an equipment and maintenance area, and connecting tunnels. These underground facilities were mined 2,150 feet beneath the land surface, in the Salado Formation, a 3,000-foot-thick bedded salt and anhydrite formation.

Data collected at the WIPP since completing the 1980 FEIS have led to better understanding of the hydrogeologic characteristics of the area and their potential implications for the long-term performance of the WIPP. In addition, there have been changes to the Proposed Action and in the information and assumptions used to analyze the environmental impacts in the FEIS. These changes include: (1) Changes in the composition of the TRU waste inventory, (2) consideration of the hazardous chemical constituents in TRU waste, (3) modification and refinement of the system for the transportation of TRU waste to the WIPP, and (4) modification of the Test Phase. Consistent with the regulations of the Council on Environmental Quality, a Supplement to the Environmental Impact Statement (SEIS) for the WIPP (DOE/EIS–0026–FS, January 1990) was prepared to evaluate the environmental impacts of proceeding with the phased development of the WIPP as modified by changes since 1980 and in light of new information.

In early 1989, the Department met with a variety of State agencies, environmental advocacy groups, representatives of Indian nations, elected officials, and others to inform them of the preparation of the Supplement and to solicit their suggestions regarding issues to be considered. On February 17, 1989, the DOE published in the **Federal Register** a notice of its intent to prepare a Supplement to the 1980 FEIS. The draft SEIS for WIPP (DOE/EIS–0026–DS) was issued and a Notice of Availability was published in the **Federal Register** on April 21, 1989. More than 2,000 copies of the draft SEIS were distributed to members of Congress, State and Federal agencies, and interested individuals. The DOE provided a 90-day public comment period on the draft SEIS between April 21, 1989, and July 20, 1989, that included twelve days of public hearings in nine locations nationwide. The DOE considered and responded to the comments raised by the public and by State and Federal officials during the public comment period by making appropriate changes or additions to Volumes I and II of the draft SEIS and/or by providing detailed responses in a new Volume III, Public Comments and Responses.

A Notice of Availability of the final SEIS was published in the **Federal Register** on February 2, 1990. Comments on the final SEIS were received from the EPA, the DOI, New Mexico's Environmental Evaluation Group, and jointly from the Environmental Defense Fund, Concerned Citizens for Nuclear Safety, the Office of the Texas Attorney General, and the Southwest Research and Information Center, which were subsequently adopted by the Natural Resources Defense Council. These comments were considered in preparing this ROD and were responded to individually. Copies of the comments and responses can be obtained from Mark W. Frei at the above noted address.

Alternatives Considered: A number of alternatives to the phased construction and operation of the WIPP for demonstrating the safe disposal of TRU waste were considered in the 1980 FEIS and in the January 1981 ROD. These included the No Action Alternative, the development of the authorized WIPP facility, the disposal of TRU waste in the first available repository for high-level radioactive waste, and the delayed selection of a site for the WIPP facility in order to consider additional sites. The 1981 ROD documented the DOE's decision to proceed with the phased construction of the WIPP at the Los Medanos site.

In the final SEIS, the DOE has analyzed the Proposed Action, which is to proceed with the Test Phase, and two alternatives.

Proposed Action. The Proposed Action is to continue with a phased approach to the development of the WIPP to demonstrate the safe disposal of post-1970 defense-generated TRU waste by proceeding with the Test Phase.

The Test Phase would involve transportation to and emplacement, in a fully retrievable manner, of a limited quantity of CH TRU waste underground at the WIPP to conduct bin-scale tests and alcove tests designed to provide data to reduce the uncertainties in performance assessment. The bin-scale

tests would be designed to provide information relevant to WIPP's ability to comply with EPA disposal standards for TRU waste, such as data on gas composition, gas generation and depletion rates, and the radiochemical source term. The waste used would be representative of the post-1970 TRU mixed waste inventory. Because of the potential uncertainties inherent in extrapolating from small laboratory or bin-scale results to the performance of the full-scale repository, alcove tests would be conducted in the WIPP as part of the Test Phase to validate gas-generation models and to predict realistic waste-inventory behavior. Some of the alcove tests would include waste modified to simulate the impacts of the actual repository environment on the long-term degradation behavior of the waste.

The second element of the Test Phase analyzed in the final SEIS would involve the conduct of an Operations Demonstration. The purpose of an Operations Demonstration would be to show the ability of the waste management system to safely and efficiently certify and package waste at generator/storage sites, transport waste to the WIPP, and emplace it underground. Testing and monitoring would be done on generating and storage facility operations, the transportation system, and the WIPP facility operations. These testing and monitoring activities would be designed to validate the safety and efficiency of WIPP operations and associated waste management systems under realistic conditions and at shipment rates similar to those expected during disposal operations.

The Test Phase would be conducted in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA), other applicable regulations, and EPA standards for the management and storage of TRU waste (subpart A of 40 CFR part 191). To assure that the impacts for the Test Phase were conservatively assessed, the final SEIS assumed, as an upper bound assumption, that a waste volume of up to 10 percent of the design capacity of the WIPP would be used for the Test Phase.

If, during the Test Phase, there were a significant indication that the WIPP as proposed would not comply with the EPA disposal standards for TRU waste, a number of options would be considered (e.g., waste treatment and/or engineered barrier or design modifications) to facilitate demonstration of compliance with the EPA standards for disposal of TRU waste. If, after considering various options, it were determined ultimately that the WIPP still could not comply with EPA disposal standards or other applicable requirements, the waste emplaced during the Test Phase would be retrieved and placed in storage. The WIPP would be decommissioned as a facility for the demonstration of the safe disposal of TRU waste and potentially put to other uses.

No Action Alternative. Under the No Action Alternative, the DOE would not proceed with the phased development of the WIPP to demonstrate the safe disposal of post-1970 TRU waste. TRU waste would not be shipped to or emplaced in the WIPP for the Test or Disposal Phases. The WIPP would be decommissioned as a facility for the demonstration of the safe disposal of TRU waste and potentially put to other uses. Temporary storage of TRU waste at various DOE sites would continue indefinitely. Over the long-term, these storage sites would be subject to low probability natural disruptive events, as well as human intrusion, with potentially unacceptable environmental impact. Treatment of newly generated mixed waste might be required to avoid conflict with the RCRA Land Disposal Restrictions. Currently, capacity for such treatment does not exist at the DOE or at commercial facilities. The No Action Alternatve would result in the indefinite continuation of extensive TRU waste storage, site monitoring, surveillance, and maintenance.

Alternative Action. This alternative is to conduct the bin-scale tests at locations other than the WIPP underground. There would be no emplacement of TRU waste in the WIPP underground until a determination were made of compliance with the EPA standards for the disposal of TRU waste. The bin-scale tests would be conducted in a specially-engineered aboveground facility that could be constructed for this purpose. The objectives of the bin-scale tests under this alternative would be identical to those described under the Proposed Action. Since the alcove tests could not be performed practically or usefully at a location other than the WIPP underground, the results of the alcove tests would not be available to increase confidence regarding extrapolation from laboratory and bin-scale results to full-scale representative repository loading. Under this alternative, the Operations Demonstration would not be conducted prior to a determination of compliance with the EPA disposal standards for TRU waste.

Environmentally Preferable Alternative: The final SEIS has analyzed the short- and long-term environmental consequences of the No Action, the Alternative Action, and the Proposed Action alternatives. In the short-term, the environmental effects of all alternatives are small. Considering short- and long-term impacts, the DOE believes that continued development of the WIPP is the environmentally preferred alternative.

Under the No Action alternative, TRU waste would continue to be generated and stored at existing storage facilities; no waste would be emplaced in the WIPP underground. The continuation of TRU waste storage would necessitate the construction of additional waste storage and/or treatment facilities. Leaving the waste in surface over the long-term rather than disposing of it in a mined geologic repository could lead to higher radiation exposures to numbers of the general public as a result of natural processes or human intrusion if government control of the storage sites were lost.

Under the Alternative Action, only the bin-scale tests would be conducted. These tests would be conducted in a specially-engineered aboveground facility that would be constructed for this purpose at an existing waste generation and storage site. Basically the same information would be gathered from these tests as with the bin-scale experiments under the Proposed Action. However, the results of the alcove-scale tests would not be available to increase confidence regarding extrapolation of laboratory and bin-scale results to a full-scale representative repository loading. Therefore, the confidence that the performance assessment is an appropriate representation of actual repository behavior would be less than under the Proposed Action, thus lowering the confidence in a timely Disposal Phase decision.

The Proposed Action continued the phased approach to the development of the WIPP to demonstrate the safe disposal of post-1970, defense-generated TRU waste. The Proposed Action, which would include the conduct of both bin-scale and alcove tests at the WIPP, would avoid establishment of comparable facilities at other locations. The facilities needed to organize, instrument, and record the large amounts of required data are already in place at the WIPP. The Proposed Action would allow for the large-scale study of the potential interaction between the

waste (representative of the waste inventory) and the underground environment, and its effect on gas generation and other phenomena. Acquisition of this in situ data would significantly reduce the uncertainties for performance assessment to support an expeditious Disposal Phase decision with minimal environmental risk.

Decision. The DOE, in compliance with NEPA and its implementing regulations, has weighed the need for the WIPP against its environmental and other impacts as updated in the Supplement to the Environmental Impact Statement, and has decided to proceed with the Proposed Action (i.e., continue with the phased development of WIPP by proceeding with the Test Phase). This Test Phase will involve emplacing, in a fully retrievable manner, a limited quantity of TRU waste underground at the WIPP to conduct tests designed to collect data to reduce uncertainties associated with performance assessment predictions that are necessary to determine whether WIPP would comply with EPA disposal standards. Proceeding with the Test Phase is in accord with the original Congressional mandate to develop a facility to demonstrate the safe disposal of radioactive wastes produced by national defense activities. The No Action Alternative is inconsistent with this Congressional intent. The Alternative Action would not provide the same degree of certainty in the data used for conducting performance assessment to determine compliance with EPA disposal standards. This decision to continue with the phased development of the WIPP is consistent with the recently released Environmental Restoration and Waste Management Five-Year Plan (DOE/S-0070), and the DOE goal to move from waste storage to final disposal.

The DOE has considered a variety of means to avoid or minimize environmental impacts from the continued phased development of the WIPP. The DOE is committed to complying with all applicable State and Federal environmental requirements and to evaluating further the potential mitigation measures described in section 6 of the Supplement. Waste emplaced during the Test Phase will be kept to the minimum quantities needed to support the purposes of the Test Phase. The DOE will work with all States through which waste will be transported to establish comprehensive training programs for emergency response personnel. The DOE also will be conducting further studies with regard to the use of rail transport for TRU waste. The DOE will continue to work with and solicit the input of State and Federal agencies, national scientific groups, and other review groups with regard to the operation of the WIPP.

The plans for the Test Phase call for initial emplacement of approximately 0.5 percent by volume of WIPP's design waste capacity for the bin-scale tests and the alcove tests. Before proceeding with the Test Phase, the institutional and technical prerequisites listed in the Secretary's Decision Plan for the WIPP must be satisfactorily completed. Examples of those prerequisites include: land withdrawal, a final decision by EPA on the RCRA no-migration petition for the purposes of testing and experimentation, and completion of the Final Safety Analysis Report (FSAR) and an FSAR Addendum that specifically analyzes safety at the WIPP during the Test Phase.

Review of the April 1989 proposed Operations Demonstration program by the National Academy of Sciences, New Mexico's Environmental Evaluation Group, the EPA, the Blue Ribbon Panel, and the Advisory Committee on Nuclear Facility Safety resulted in a variety of major comments being provided to the DOE. The comments primarily focused on the timing of the proposed program relative to a determination of compliance with the EPA disposal standards for TRU waste, and on the scope (i.e., quantities of waste and the rates at which it is received) relative to the operational experience to be gained from the performance assessment test program. Based on a reevaluation of the proposed Operations Demonstration, the DOE has decided that a decision on whether to proceed with an Operations Demonstration as part of the Test Phase should not be made until a high-level of confidence in complying with the EPA disposal standards has been achieved and a determination is made that additional operational experience with waste is required. The following activities must be completed before DOE can make a decision on the scope of the Operations Demonstration program (i.e., a determination of whether additional operational experience with waste is required):

(1) An evaluation of the feasibility of the EPA recommendation of monitoring the performance of the facility by emplacing waste (approximately 1.5 percent of design capacity) in 2 full-scale, instrumented, backfilled, sealed rooms after a satisfactory demonstrat of retrieval using simulated wastes;

(2) Establishment of systems objectives and criteria for evaluating disposal operations readiness; and,

(3) A preliminary report is issued on operational experience gained from the handling and emplacement of TRU waste for the performance assessment tests and an assessment of this experience relative to the pre-established system objectives and criteria for WIPP disposal operations readiness.

The need for additional NEPA documentation will be evaluated during the Test Phase. Prior to a decision on whether to proceed to the Disposal Phase, the DOE will issue a second SEIS. The second Supplemental EIS will analyze the long-term performance of the WIPP in light of information generated during the Test Phase and will analyze in more detail the impacts of processing and handling TRU waste at each of the generator/storage facilities for shipment to the WIPP for disposal, including the impacts of any proposed waste treatment.

Proceeding with the Test Phase at the WIPP requires the receipt of TRU waste at the WIPP facility. Public Land Order 6403, issued in 1983, under which the DOE is currently developing the WIPP facility, does not allow the receipt of radioactive waste on the site. The DOE would prefer that the withdrawal of the WIPP site lands be made by Congress rather than continuing to acquire use of the lands through administrative means. Accordingly, the DOE submitted on April 3, 1990, a proposed bill to the Congress, which would provide for the withdrawal of the WIPP site lands. However, in order to continue the phased development of the WIPP in a manner consistent with Public Law 96-164, the DOE also is requesting that the Secretary of the Interior support a parallel option of administrative land withdrawal by modifying the current Public Land Order to allow the receipt of waste at the WIPP for the Test Phase in the event that the Congress does not enact land withdrawal legislation.

Issued at Washington, DC this 13th day of June, 1990.

Approved:

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[FR Doc. 90-14509 Filed 6-21-90; 8:45 am]

BILLING CODE 6450-01-M