

GILBERT, KIM
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Hanford. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

May 29, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC 20096-3786

To whom it may concern:

I am writing to express my concerns about the U.S. Department of Energy consideration of processing plutonium at Hanford. Hanford should be cleaned up, not expanded.

Already, nuclear waste is leaking into the Columbia River and the Billions of dollars that have been spent on cleaning it up have been wasted on bureaucracy rather than actually cleaning it up.

This is a very dangerous area and we seriously protest any discussion or ideas of using the area further!

Sincerely,



Kim Gilbert

1/08.03.01

M-246

GILKISON, JOSEPH M., MARTINEZ, GA
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

3902 Lobdell Trail
Martinez, Georgia 30007
May 1, 1996

U. S. Department of Energy
Office of Fuel Materials Disposition
P. O. Box 23796
Washington, D.C. 20026-3796

Dear Sir:

I attended the public meeting for the EIS for the Storage and Disposition of Weapons Materials held in North Augusta, SC, on April 31, 1996. Of the three options discussed, storing the materials and then disposing of them as fuel for commercial reactors appears to me to be clearly the preferred and most desirable disposal method. Since some commercial electric utilities are interested in using the materials as fuels, the materials should then be treated as an asset and not as junk or waste as is the apparent assumption used when considering the vitrification or bore hole disposal methods. Considerable sums of taxpayers money have been spent refining these materials. It seems ludicrous to me to spend additional money disposing of the materials without even attempting to recover any asset value that the material now has.

Of the three disposal methods, I would consider the bore hole method as being the least desirable. All too often technologies believed to be inherently safe have been found with time to have unwanted attributes. It would seem to me that if after burying these materials in deep holes and an undesirable condition is found after time, recovery of the materials may be close to impossible and very costly at the least.

Again, I wish to express my opinion that disposal of the material as fuels for commercial electric power reactors is a much preferred alternative over disposing of the materials as waste.


Joseph M. Gilkison

1/08 03.01

2/08 03.01

M-114

GOERGEN, CHARLES R., AIKEN, SC
PAGE 1 OF 1

May 6, 1996

Storage and Disposition of Weapons-Usable Fissile Materials Draft PEIS Public Comment
Charles R. Goergen
510 Boardman Road
Aiken, SC 29803

I am providing this comment to support the a mixture of options for disposition of weapons-usable fissile materials, specifically plutonium. These are based on the following premises:

- Plutonium should be considered a national asset rather than a liability.
- The disposition should not be disposal.
- The plutonium should be used for maximum realization of its energy value.
- There need not be a rush to achieve ultimate disposition of the plutonium.

The long-term disposition of plutonium should be production of energy. The reactor design should maximize the output of usable energy rather than a short term irradiation to transform some material and isotopically dilute the rest. This need not be achieved in the next decade or two. Research and design could be carried out at a pace that current budgetary limits support. As an analogy, the United States has many crude oil wells that are capped because they are currently uneconomical to pump. However, the will come a time in the future that cheap foreign oil is not available and it will be tapped. Until that time comes for plutonium I support a long term storage alternative.

Stabilization of plutonium solutions, scrap and residues per the Defense Nuclear Facilities Safety Board (DNFSB) 94-1 Implementation Plan and the Plutonium Vulnerability Management Plan should be vigorously pursued to achieve a form that meets the Criteria for Safe Storage of Plutonium Metals and Oxide. The current inventory of excess plutonium "pits" removed from nuclear weapons when packaged in the AT-400A package will achieve the long term storage standard. The storage standard form is intended to last a minimum of 50 years. This can give the U.S. an adequate period of time to develop the best reactor disposition alternative in a cost-effective manner.

The U.S. should consolidate its excess plutonium storage to a single site under full International Atomic Energy Agency (IAEA) safeguards per the intent of the Non-Proliferation Treaty. If we expect the IAEA to ensure inspected countries are not diverting material, it should be trusted to safeguard American materials. International inspections should be the method by which Americans assure the world that this material will not be reused in weapons. A new storage facility should be built that incorporates the latest and best in monitoring and surveillance techniques. The facility should be expandable in modular fashion to accommodate and facilitate any international agreements for the U.S. to safeguard other countries' inventories. It should be able to be used as a blueprint for building duplicates in other countries. Application and demonstration of exemplary safeguards until eventual disposition use has the highest likelihood of being emulated by foreign governments.

1/08.03.01

2/08.03.01

F-020

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for new facilities for long-term storage of weapons-usable fissile materials. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

GOODELL, RICHARD S., AMARILLO, TX
PAGE 1 OF 1

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

	NAME (Optional) <u>RICHARD S. GOODELL</u> ADDRESS <u>2419 IMPERIAL DR. AMARILLO TX 79121</u> TELEPHONE <u>806 357 2039</u>
	I AM A CERTIFIED SAFETY PROFESSIONAL, AND I HAVE WORKED AT FOUR DOE FACILITIES: LOS ALAMOS NATIONAL LABORATORY, LIVERMORE NATIONAL LABORATORY, SANDIA NATIONAL LABORATORY, AND PANTEX. IT IS MY PROFESSIONAL OPINION PANTEX IS THE SAFEST AND MOST ENVIRONMENTALLY CONSCIOUS OF THESE FACILITIES.

1/08.03.01

TX-044

GOODWIN, MARIAN, BLACKFOOT, ID
PAGE 1 OF 1

Comment ID: P0006
Date Received: April 18, 1996
Name: Marian Goodwin
Address: 455 South Street
Blackfoot, ID 83721

Transcription:

I just want to say that I'm in full support of the INEL and would like to see programs implemented out there to keep the thing going. And I'd also like to say that I'd like to apply for a job when there's an opening. I have a degree in waste management and biology and I can be reached at 208-785-8616 (day) and 208-684-3569 (after 3:30pm). Anyway, I just want to say I'm in support of the INEL. Thank you.

1/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for additional missions at INEL. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-006

GRAF, EUGENE L., NORTH AUGUSTA, SC
PAGE 1 OF 1

 United States Department of Energy		
NAME (Optional) <u>EUGENE L. GRAF</u> ADDRESS: <u>1104 CAMPBELLTON DRIVE, N. AUGUSTA SC</u> TELEPHONE: <u>(803) 279-2441</u>		
① DOE SHOULD CONSIDER THE POTENTIAL ENERGY BENEFIT TO BE GAINED BY USE OF THE PLUTONIUM AS A REACTOR FUEL PLIN THE ENVIRONMENTAL ADVANTAGE AS A RESULT OF NOT USING THE NON-RENEWABLE SOURCES OF ENERGY SUCH AS COAL, OIL, etc. THIS SHOULD ALSO INCLUDE THE ACCIDENTS ASSOCIATED WITH ONE OF THESE ENERGY CHOICES	1/09.00.08	09 00 08
② DIRECT DISPOSAL OF PLUTONIUM IN SPENT FUEL SHOULD CONSIDER THE LACK OF CHEMICAL IMMOBILIZATION - i.e. THE AVAILABILITY OF THE PLUTONIUM AS HIGH LEVEL WASTE GLASS	2/04.01.00	04 01 00
③ DOE SHOULD RECOGNIZE THAT IF IS THE DEPARTMENT OF ENERGY AND LEAD IN DEVELOPING PROGRAMS THAT LEAD IN THE EFFICIENT CONSERVATION OF ENERGY	3/15.00.00	15 00 00
		Comment noted.
		Comment noted.

SR-007

Comment Number 1

09 00 08

Based on comments received, several sections of the Final PEIS include additional analyses. These sections (in Section 4.9) include Impacts on Uranium Mining and Nuclear Fuel Cycle Industries, Avoided Environmental Impacts of Using MOX Fuel Instead of Traditional Low-Enriched Uranium Fuel in Nuclear Power Plants, and Avoided Environmental Impacts of Using Nuclear Power Plants Instead of Fossil Fuel Power Plants. The Avoided Environmental Impacts of Using MOX Fuel Instead of Traditional Low-Enriched Uranium Fuel in Nuclear Power Plants section in the Draft PEIS includes the health impacts avoided to the public and workers for the mining and milling industries. Other avoided impacts to air quality and waste generated were added to the Final PEIS.

Comment Number 2

04 01 00

Comment noted.

Comment Number 3

15 00 00

Comment noted.

GRAMSTORFF, JEANNE B., FARNSWORTH, TX
PAGE 1 OF 1

Box 250
Farnsworth, TX 79033
April 22, 1996

Department of Energy
1000 Independence Avenue, S. W.
Washington, D. C. 20585
Dear Sirs:

I oppose the use of the Pantex Plant near Amarillo, Texas, for a permanent nuclear waste facility, particularly the processing of plutonium at this site.

The Pantex Plant has already contaminated perch water under and near its facility, and endangers neighbors who use the Ogallala ground water for irrigation. Drawing water from the area, as ground water wells do for the water in Amarillo, and for irrigation, draws water to those wells from the area. It will not be long before contaminated water shows up in Amarillo's water supply. We cannot afford to add the dangers of plutonium and permanent nuclear waste storage to this already present danger. The Ogallala is the only water available to the entire Texas Panhandle. When it is contaminated, the area will have to be abandoned. We cannot afford another Rocky Flats pollution disaster in this area.

Sincerely,

Jeanne B. Gramstorff

Jeanne B. Gramstorff

1/08.03.01

2/09.04.04

M-238

08 03 01 **Comment Number 1**

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 04 04 **Comment Number 2**

Waste/hazardous material treatment/handling operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface water which could then migrate to the groundwater.



PRELIMINARY COMMENTS ON PLUTONIUM DISPOSITION PEIS
April 10, 1996
Greenpeace International

The task of what to do with weapons plutonium produced during the Cold War is a formidable one. We recognise that the process of making and implementing a "disposition" option could likely be an arduous one, with disagreements along the way, but it is clear that the process must lead to one that results in a world free from the threat of escalating proliferation of stockpiles of weapons-usable plutonium.

The plutonium dilemma that now confronts us in the US is yet another legacy of misguided Cold War policies; we must not allow steps which have been made away from the threats of the nuclear arms race to be reversed. In only one way it is good that we are currently faced with the problem of what to do with the plutonium removed from nuclear weapons: the process of disarmament as required under the Nuclear Nonproliferation Treaty (NPT) has finally begun.

START III and Beyond

Given the growing demand by the international community that NPT disarmament obligations be met, the stockpile of plutonium removed from weapons will only grow. The U.S. now faces the challenge to show that it can meet its treaty commitments and quickly move far beyond the high level of nuclear weapons negotiated under the START II agreement. Deep cuts and then elimination of nuclear weapons will lead to a stockpile of so-called surplus plutonium of almost 100 tonnes.

The decisions made about what to do with this dangerous material must be made with deliberate and thoughtful analysis. But it appears that the Department of Energy has been too hasty in its rush to implement a "disposition" option which is lacking in both analysis and depth. DOE must return to the drawing board and newly prepare this document with full consideration given to the global proliferation implications of the disposition decision.

Proliferation Impacts Ignored

While it is of utmost importance to irreversibly remove the plutonium from weapons, what is done with the material will have far-reaching international proliferation impacts. Although it is widely agreed that the meeting of a "high-level waste standard"

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Greenpeace is a non-violent, non-partisan, non-sectarian organization.

01 03 00 Comment Number 1

Although Strategic Arms Reduction Talks (START) II protocol nuclear-weapons levels are beyond the scope of this PEIS, global proliferation concerns and the need to encourage reciprocal actions by Russia are integral parts of various sections of the PEIS, including the purpose and need and the Preferred Alternative. Furthermore, proliferation implications for the various alternatives and variants are evaluated in DOE's nonproliferation analysis, which was issued for public review in October 1996. DOE's ROD will be based on the nonproliferation analysis, as well as the environmental analyses, technical and economic studies, national policy considerations, and public input.

01 06 00 Comment Number 2

As explained in the response to Comment Number 1, global and domestic nonproliferation is considered in various parts of the PEIS. The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action, or negotiate reciprocal actions, with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and nonproliferation policy impacts are described in separate documents, and will be considered in DOE's decision. The *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives* was made available for public review in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the nonproliferation analysis as it relates to the PEIS alternatives and variants.

The analysis of the nonproliferation impacts examines, among other things, the risk of theft, risk of reversal, and arms reduction impacts for the various disposition alternatives.

1/01.03.00

2/01.06.00

DC-002

13 00 00 Comment Number 3 As discussed in the <i>Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives</i>, appropriate safeguards and security would be used for the various steps of the MOX process. The safeguards and security for pit disassembly/conversion and MOX fuel fabrication would likely be similar to safeguards for the weapons-usable fissile materials. Furthermore, the facilities would be inspectable by IAEA. The DOE safe secure trailer (SST) system will be utilized for the transportation of the fresh MOX fuel which includes armed nuclear materials couriers. Once irradiated, the spent MOX fuel would meet the spent fuel standard and be disposed of in a geologic repository.	2/01.06.00 cont.
01 04 00 Comment Number 4 The Reactor Alternatives would utilize a once-through fuel cycle. Spent fuel would be disposed of with other commercial reactor spent fuel. Pu would arrive at the reactor in the form of fresh fuel which could not be used in weapons without extensive reprocessing to extract the Pu. Necessary safeguards and security at the reactors would be provided. The facilities would be inspectable by IAEA, as appropriate. The nuclear reactors would not become nuclear weapons storage sites.	3/13.00.00
01 06 00 Comment Number 5 The Department of Energy acknowledges the commentator's opposition to the Reactor Alternative using MOX fuel and the commentator's concerns about reprocessing. The President's Nonproliferation Policy says the United States will not recycle Pu. Burning weapons Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this process will not be extracted for reuse in new fuel. This is consistent with U.S. policy since no Pu is being recycled. After a once-through fuel cycle, the Pu would be converted to a nonproliferation form as spent reactor fuel. Thus, foreign reprocessing would not be encouraged by the Reactor Alternatives. Section 2.4.5.1 of the Final PEIS has been expanded to clarify that reprocessing would not be part of the Reactor Alternatives. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.	4/01.04.00
5/01.06.00 MOX - Reprocessing It appears that nowhere in the document has DOE recognized the intimate relationship between the reprocessing industry and the use of plutonium fuel (mixed oxide fuel, MOX) in nuclear reactors. Every country which uses MOX fuel is either engaged in reprocessing or has close links with the reprocessing industry. Yet, in the EIS DOE has a total memory lapse, both failing to analyze the international interconnectedness of MOX, reprocessing, and plutonium use and stockpiling as well as failing to analyze potential impacts on a potential domestic plutonium industry. Given the dismal failure of breeder reactors, plutonium reproprocessors now present MOX as the justification for	5/01.06.00
"Direct Use" Material Nowhere in the EIS is there an in-depth discussion of the dangerous nature of MOX. Unlike conventional uranium fuel, MOX is regarded by the International Atomic Energy Agency (IAEA) as well as the US Government of requiring protection due to the ease with which the weapons plutonium can be separated from the fuel. The IAEA deems MOX as being of "direct use" in nuclear weapons and the US requires military escort during transport. As a result of the military nature of the material, reactor operators in the US or Canada using MOX would effectively become nuclear weapons storage sites. To incorporate allegedly civilian facilities into the military complex raises serious questions about theft or diversion of the material from the reactors and during transport. The public will be quite hesitant to embrace the idea that their local reactor has become a storage site for nuclear weapons materials.	DC-002

01 06 00 Comment Number 6

The Reactor Alternatives, which would use MOX fuel, would not contradict the U.S. Nonproliferation Policy. As explained in the PEIS, the alternatives would pertain only to surplus weapons-usable Pu, such as from dismantled weapons, and would not use or encourage the use of MOX fuel based on other sources.

5/01.06.00
cont.

reprocessing. What was once an imaginary dream to "complete the nuclear fuel cycle" has now boiled down to a business in search of customers. The European reprocessing companies British Nuclear Fuels (BNFL) and COGEMA are currently building up massive stockpiles of plutonium and are attempting to gain new reprocessing and MOX clients around world. Belgonucleaire is attempting to sell its MOX services to any willing client. Russia and Japan are similarly engaged in reprocessing and plutonium stockpiling with a goal to use both MOX and breeder reactors. Yet DOE has turned a blind eye to this international reprocessing-MOX connection.

Likewise, the likely connection in the US between a MOX industry created by use of weapons-grade plutonium and a future plutonium economy is ignored in the EIS. The history of interest in MOX in the US, as in other countries, is also tied to the reprocessing industry, as reflected by the GESMO process and the failed West Valley, Morris and Barnwell reprocessing experiments. But in spite of the past connection in the US between MOX and reprocessing, the EIS does not stop to reflect on what the future might hold if the US pursues MOX.

MOX Contradicts US Nonproliferation Policy

In September 1993, President Clinton issued a nonproliferation policy which stated that "The United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes. The United States, however, will maintain its existing commitments regarding the use of plutonium in civil nuclear programs in Western Europe and Japan." The policy also stated that the US would "seek to eliminate where possible the accumulation of stockpiles...of plutonium" and "explore means to limit the stockpiling of plutonium for civil nuclear programs."

2/01.06.00
cont.

If implemented, a decision to use MOX will violate this policy in many ways. First, any use of MOX in the US will go far beyond encouragement of the civil use of plutonium. Second, use of MOX will be an active encouragement to reprocessors in Europe, Japan, Russia (and potentially in other countries) which have inextricably woven together the reprocessing and MOX industries. Third, any agreements reached with European MOX fabricators to either provide MOX fabrication service in Europe or to assist in MOX fabrication in the US will constitute a new (not existing) commitment which will heartily be welcomed as boost to reprocessing/MOX.

The EIS has failed to evaluate the potential violations of President Clinton's nonproliferation policy or how the policy is anticipated to be changed in the case a MOX-use decision is made.

6/01.06.00

5/01.06.00
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DC-002

MOX Fabrication Facility	It is extremely unclear what would become of a MOX facility in the US once the weapons grade plutonium stockpile had been fabricated into fuel. Given the expense of such a facility and the environmental impacts which would loom after its operation, it would seem that DOE would discuss the fate of the facility once its mission was over. But it does not seem that the decontamination and decommissioning of any MOX plant is included in the EIS. By lack of such a discussion, it is implied that another mission might await such a facility once the weapon-grade stockpile was depleted. Thus, the construction of a MOX plant might serve to stimulate commercial reprocessing as part of the infrastructure to support use of the plutonium would already be in place.	7/01.06.00
By choosing a mix of disposition options including MOX, the incentive to use a MOX fabrication facility for a second plutonium fuel fabrication mission might actually increase. A two or multi-option decision would mean that less plutonium was available for MOX, thus leading to increased cost per unit. With this increased cost, the impetus to continue use of the facility with commercial weapons-usable feedstock in an attempt to recoup cost or justify the facility's construction could actually increase.	Given that the main European reproprocessors could be in on operation of any US MOX facility, that a primary DOE contractor (Westinghouse Savannah River Company) at one of the leading sites for a MOX facility (Savannah River Site) has actually prepared a study as to the feasibility of commercial reprocessing, and that a section dealing with "conditioning" (reprocessing) has been included in the Nuclear Waste Policy Act of 1996, we consider that the warning signs of hidden reprocessing agendas are clear.	8/01.06.00
"Expressions of Interest"	Under the plutonium disposition EIS process, no reason can be found for the December 1995 solicitation of "Expressions of Interest" from utilities and nuclear companies for their interest in MOX. The request for EOIs was simply an expediency of the moment apart from the formal EIS process.	9/08.00.00
As has been done in the EIS, the DOE did not outline in the solicitation to the utilities the proliferation risks of MOX use in the US. And the utilities have similarly chosen to also either ignore or obfuscate the connections. Utilities responding to the solicitation have presented their goals as noble - wanting to help with weapons-grade plutonium disposition - yet their real interests clearly are pecuniary in nature. Compensation, not public service, is the motivational factor.	4	DC-002

But while the EOs have become an integral part of the discussion about plutonium disposition they remain apart from the EIS process. Given that DOE sought the "expressions" outside of the EIS process raises serious questions as to the legitimacy of the EIS and decision-making process itself. If the EOI process is serious and is part of the decision-making process, the reactor or facility of each and every response should be incorporated officially in the EIS as DOE is in practice conducting a review of the viability of the proposals as they relate to the EIS. Just as DOE sites were covered in the EIS, the private facilities now involved in the process must be brought into the EIS or the entire EIS process should begin again.	An egregious example of monetary interest at work can be seen by the offer of TEAM CANDU, led by ASCT Technologies and Ontario Hydro Nuclear. This proposal is to transport MOX fabricated in Canada or Europe to the Bruce A reactor complex on Lake Huron. The idea has been presented as being acceptable to Canadians but the formal process of government approval has not begun and the public debate in Canada over this idea has only just started. That public debate is likely to be quite contentious given that weapons-grade plutonium would roll on Canada's highways and the resulting plutonium-laden spent fuel will be left in Canada.	Ontario Hydro has not been forthcoming in stating that the Bruce A reactors are in need of retubing which has been estimated to cost \$300 million each. The Bruce 2 reactor was taken out of service in 1995 in order to avoid this costly expense and other major repairs and the other Bruce A reactors are scheduled for retubing beginning in the year 2000. But given the expense of the overhaul and difficulty of justifying such an outlay in an increasingly competitive electricity market, it is possible that Ontario Hydro will have to close the reactors.	Why are the financial problems of Ontario Hydro not mentioned in the Expression of Interest? Is there a desire on their part to justify the expense of retubing by pursuing the MOX mission. And will US taxpayers end up underwriting these expenses? DOE and TEAM CANDU must come forward and reveal the true condition of the reactors at Bruce A and what the anticipated repair costs are. Similarly, if reactor problems such as being experienced by Ontario Hydro exist with the US utilities expressing interest, the EIS must fully reveal and evaluate them.	Lack of Documentation DOE contends that it does not have to publicly release information concerning the costs of the various options until
9/08.00.00 cont.	10/01.03.00	11/01.03.00	12/08.00.00	DC-002

general conditions? The request for "Expression of Interest" in the use of existing reactors for the disposition of Pu was only one of a series of actions taken by DOE to obtain technical, cost, schedule, and policy information. That information, along with the PEIS, will be presented to the decisionmaker in order to help ensure a well-informed decision. The *Technical Summary Report for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0003) provides an explanation for the issuing of this request for "Expression of Interest." Should a Reactor Alternative be selected at the ROD, DOE would issue a Request for Proposal to interested parties to solicit MOX fuel fabrication facility design and construction proposals and/or proposals for burning the MOX fuel in reactors.

The disposition sites used in the PEIS for analysis are considered representative, and a combination of sites was used. Tiered NEPA reviews, as appropriate, will examine specific locations, as stated in the PEIS; specific reactor location(s) will depend, in part, on market conditions and contract negotiations. The explanation of representative sites in Section 2.1.4 of the PEIS has been expanded to provide further clarification of the approach used for the sites for the analysis of environmental consequences.

01 03 00 Comment Number 10

Should the CANDU Reactor Alternative be chosen for Pu disposition, further negotiations between the U.S. and Canadian Federal and Provincial Governments will be required before implementation, as well as business negotiations with reactor owners. In addition, according to the Canadian Government (see letter sent by the Canadian Embassy in Washington, DC, dated June 6, 1996, reproduced in this CRD) implementation would be subject to Canadian Federal and Provincial regulations, and an appropriate level of analysis by the licensee of health, safety and environmental impacts would be required before issuance of an operation license and before any decision on burning Pu in a CANDU reactor could be implemented.

01 03 00 Comment Number 11

The Department of Energy (U.S. taxpayers) will not be underwriting the expense of retubing any reactor. Selection of a specific reactor(s) would be

just before a Record of Decision is made. We contend that both as a matter of record for the Draft PEIS as well as in compliance with a sound openness policy that such documentation must be released as soon as it is available and long before the EIS comment period closes. As the DOE repeatedly states in the EIS that "cost-effectiveness" will be a part of the disposition decision, no tools have been provided to aid in the public in the determination of the costs of the various options. All cost and economic evaluations must no longer be kept secret and be allowed to be reviewed as part of the EIS process. It does not appear that reference or citation is made in the EIS to important documents which must be made available to the public during the Draft EIS comment period. For example, a document prepared by AECL Technologies on the CANDU reactor option is not mentioned in the EIS. And documents pertaining to work being done between Oak Ridge National Laboratory (ORNL) and Belgonucleaire in MOX performance are not mentioned in the EIS. Immobilization It appears to us that the guiding hand in any decision must be that of nonproliferation linked with environmental protection. Given the risks associated with an endorsement of MOX and the plutonium economy, we believe that immobilization is the only viable disposition option. Given a need for further research into immobilization techniques, we therefore request that DOE provide more money in FY 1997 to expand research into the various options. Given that the prime mission of the Defense Waste Processing Facility is to vitrify high-level waste and not to be used for plutonium vitrification research, we endorse the idea of a pilot vitrification plant to study the feasibility of this option. Requests Given the seriousness of the issue at hand and the need for a careful analysis by the public of the options presented, we hereby make the following requests: 1) That all documents pertaining to cost of the various disposition options be immediately placed in the DOE public document rooms or be publicly released as soon as they are finished and be made a part of the Draft EIS record. 2) That all documents pertaining to research into MOX use and immobilization be placed immediately in the public document rooms and be made part of the Draft PEIS record.	12/08.00.00 cont.
	13/08.00.00
	14/08.03.01
	15/05.01.06
	16/08.01.00
	DC-002

through responses to Requests for Proposals and follow-on business and contract negotiations.

08 00 00 Comment Number 12

In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analysis were made available in October 1996. These analyses, along with the environmental analysis and public input, will be integrated into DOE's decisionmaking process.

08 00 00 Comment Number 13

Based upon this comment, the index of reference materials in the DOE Public Reading Rooms was improved. Further references in the Final PEIS were checked for completeness. The documents referred to by the commentator were not cited in the PEIS. However, the AECL Technologies, Inc., *Plutonium Consumption Program, CANDU Reactor Project*, July 31, 1994 is cited in the *FMDP CANDU PEIS Data Report* which is a cited reference in the PEIS. The work between Oak Ridge National Laboratory (ORNL) and Belgonucleaire was not relied upon for the PEIS.

08 03 01 Comment Number 14

The Department of Energy acknowledges the commentator's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 01 06 Comment Number 15

Research and development is both on-going and planned to support the disposition alternative(s). If immobilization is selected in the ROD, DOE may propose pilot facilities. Currently the can-in-canister variant of the Immobilization Alternative is being researched at the SRS Defense Waste

Processing Facility (DWPF). Based on public comments, Appendix O has been added to the PEIS to describe this variant.

08 01 00 Comment Number 16

The Technical Summary Reports, which contain cost information for both storage and disposition, were made available to the public (and have been placed in the DOE Public Reading Rooms) in July 1996 and will be included in the decisionmaking process. Documents related to research concerning MOX fuel, storage and immobilization which are cited in the PEIS, are available in the DOE Public Reading Rooms and are part of the PEIS record.

Budget figures and research documents may be made available upon appropriate request. However, the budget is not part of the NEPA process and the budget figures are not included in the PEIS record. Research documents that are cited and relied upon in the PEIS are available in the DOE Public Reading Rooms and are part of the PEIS record.

The Expression of Interest is not part of the NEPA Process. (See response to Comment Number 9).

3) That detailed budget figures for Fiscal Years 1996 and 1997 for MOX, storage and immobilization research be made available and that all documents produced in conjunction with such research be publicly released as soon as they are available and be made part of the Draft PEIS record.

4) That the public comment period be extended until such time as pertinent economic and technical documents are made available.

Given the fact that the "expressions of interest" in MOX use have de facto become a part of the EIS process and that documentation associated with such expressions was not publicly available until approximately March 29, further justification exists for an extension of the comment period.

Thank you for the opportunity to submit these comments. We will submit more comments and documentation at a later date.

16/08.01.00
cont.

DC-002

GREENPEACE, WASHINGTON, DC,
TOM CLEMENTS
PAGE 1 OF 13



April 9, 1996

Re: Draft PEIS on Plutonium Disposition

To Whom it Concerns:

I am hereby submitting the following Greenpeace document to be included in the record for the "Storage and Disposition of Weapons-Usable Fissile Materials" PEIS. The document was originally prepared for the G7 summit in Moscow on April 19 & 20, 1994.

As any decision by the U.S. Department of Energy to use mixed oxide fuel (MOX) will have grave international proliferation implications, the final PEIS must thoroughly review those implications. Internationally, the MOX industry is inextricably linked to the reprocessing industry and serves as a stimulus to further reprocessing and associated plutonium stockpiling. The PEIS must address the impact that any U.S. MOX use will have on international plutonium reprocessing and subsequent stockpiling and use as fuel. Use in the U.S. of MOX will likely serve as a global plutonium proliferation stimulus and thus the international MOX and reprocessing implications must be analyzed in the final PEIS.

While we will submit additional documents, the attached document will serve as a background on the proliferation implications of the MOX option.

Sincerely,

Tom Clements

Tom Clements
Greenpeace International
Plutonium Campaign

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Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • Czech Republic • Denmark • Finland • France • Germany • Guatemala • Iceland • Italy • Japan • Luxembourg • Mexico • The Netherlands • New Zealand • Norway • Russia • Spain • Sweden • Switzerland • Tunisia • Ukraine • United Kingdom • USA

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01 06 00 Comment Number 1

Comment noted. The President's Nonproliferation Policy says that the United States will not recycle Pu. Burning weapons Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this process will not be extracted for reuse in new fuel. This is consistent with U.S. policy since no Pu is being recycled. After a once-through cycle, the Pu would be converted to a nonproliferation form as spent reactor fuel. This would not be a subsidization of the nuclear industry, nor provide any further stimulus for international Pu processing.

The Department of Energy has prepared and released for public comment a report on the nonproliferation analysis of the disposition alternatives, including the Reactor Alternative using MOX fuel. A series of public meetings were held on the scope and content of the report, and to receive comments on the report. The results of this nonproliferation analysis will be included in the decisionmaking process, along with the environmental, technical, cost and schedule analyses, and other public comments.

Reprocessing of MOX fuel in foreign countries is beyond the scope of, and not encouraged by, this PEIS. The purpose of this PEIS is disposition of surplus U.S. origin weapons-usable Pu, and storage of U.S. origin weapons-usable fissile materials. The Greenpeace document referred to by the commentator is included in this CRD and is part of the Administrative Record for the PEIS.

1/01.06.00



GREENPEACE

March 1996

PLUTONIUM AND THE NUCLEAR SAFETY SUMMIT: OUT OF CONTROL !

INTRODUCTION

The threat posed by weapons-usable fissile materials is one of the central topics for the Nuclear Safety Summit to be held in Moscow, April 19-20th, 1996 - and for good reason. Approximately 100,000 nuclear weapons worth of fissile materials (plutonium and Highly Enriched Uranium - HEU) has been produced over the past fifty years as a result of the nuclear arms race and the commercial nuclear industry's promotion of weapons-usable materials as fuels for nuclear energy.

It is therefore to be welcomed that the G7 and Russia recognise that the threat posed by these materials requires action at the highest level. However, as this paper seeks to demonstrate, the political, economic and strategic interests of most of the G7 and Russia means that no real effort to reduce the threat posed by plutonium and other fissile materials will be launched by the Nuclear Safety Summit.

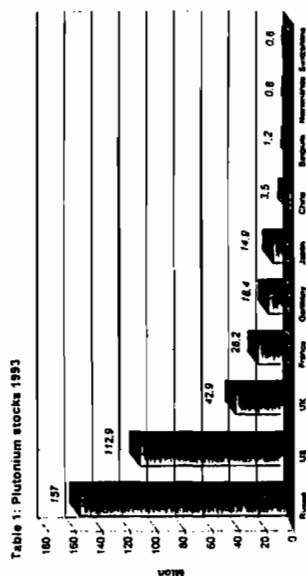
Greenpeace believes that so long as these interests determine the policies of the governments concerned, plutonium stockpiles will continue to grow, as will the global threat. Rather than statements of concern, the problem needs to be dealt with directly. What is required is an international commitment for the negotiation of a comprehensive international convention that would ban: all plutonium production and use - the so-called Fissile Material Convention. This would prohibit all further reprocessing of plutonium, no use of plutonium Mixed Oxide Fuel (MOX), inclusive of a ban on MOX as a weapons plutonium disposition option, and the eventual removal from national control of all stocks of weapons-usable fissile materials.

PLUTONIUM DEMAND AND SUPPLY

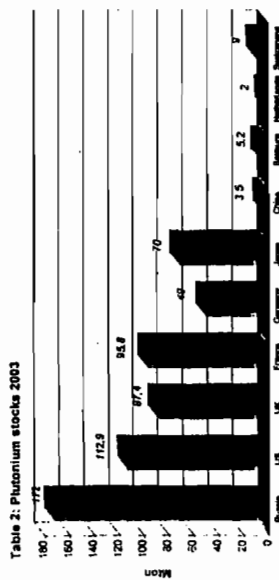
For the purpose of this paper, all the plutonium referred to is separated (reprocessed) weapons-usable material. Thus, although it is important to state clearly the amount of plutonium in military inventories from material in commercial programmes, the distinction is in fact artificial.

Global plutonium stockpiles at the end of 1993 were in the region of 375 tonnes, of which 255 tonnes is contained within the military stockpiles of the nuclear weapon states - Russia, the United States, France, the United Kingdom, and China. The remaining stocks, around 120 tonnes, is so-called civilian plutonium, produced by commercial nuclear reactors, and reprocessed principally in the United Kingdom and France. However, whereas military plutonium production has almost ceased completely, commercial plutonium stocks are continuing to rise. In 1995, more than 20 tonnes of plutonium was produced at reprocessing plants in the UK, Russia, France and Japan. By the year 2000, so-called civilian stocks of plutonium will be nearly equal to current military stocks.

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All figures are for December 31st, 1993, unless otherwise stated.



The figures are inclusive of plutonium loaded into MOX fuel, either loaded or stored for use in FBR and Thermal reactors. For all figures there is at least a ten percent uncertainty margin with the exception of the figure for the US.

Most of the plutonium listed in the non-nuclear weapon states, refers to ownership, in most cases the plutonium is currently stockpiled at three sites: Sellafield (UK), La Hague (France) and Oznorsk (Russia). It should be noted however that all of the plutonium under contract at these sites is eventually to be returned to the country of origin.

References:

- Russia: ~10%, Albritton, et al. Figures as at December 31, 1993. SIPRI Yearbook 1993.
- US: 100%, SIPRI Yearbook 1993.
- UK: ~10%, Albritton, et al. Figures as at December 31, 1993. SIPRI Yearbook 1993.
- France: ~10%, Albritton, et al. Figures as at December 31, 1993. SIPRI Yearbook 1993.
- Other Countries: ~10%, Albritton, et al. Figures as at December 31, 1993. SIPRI Yearbook 1993.

The reason that global stocks of civilian plutonium are growing so rapidly is due to policies that were adopted during the 1960's and 1970's by many of the G7 nations. During this period the nuclear industry argued that in the near future uranium resources would become scarce, with a direct effect on both the economics and the ability to operate uranium fuelled reactors. Thus large resources were committed to the research and development of Fast Breeder Reactors (FBRs). These reactors were supposed to produce power, while also creating more plutonium than was used originally as a fuel. The fuel for the reactors would initially come from reprocessed plutonium produced in Light Water Reactors, requiring the construction of large-scale reprocessing facilities. However, the FBR reactors that were built, with few exceptions, have failed to operate successfully. France was to have six of these reactors on-line by 1985 - instead two are operating at low-power, and with no plans for new reactors; the former Soviet Union was to have 12, instead three operate, but with constant technical problems. The UK, U.S. and Germany have closed their FBR reactors.

Despite the collapse of the FBR experiment, by the late-1970's, electrical utilities had already signed large commercial contracts for the reprocessing of their nuclear reactor spent fuel with the UK and France. Thus, at the same time that FBR programmes were being abandoned or dramatically scaled back, construction of large-scale reprocessing plants, financed by Japanese, German, UK, French, Swiss, Belgium and Dutch utilities was proceeding.

Having committed billions of dollars for the construction of reprocessing plants, and confronted with large stocks of plutonium, utilities in these same countries (with the exception of the Netherlands) have laterally opted to use the plutonium as fuel in their Light Water and Boiling Water Reactors. However, plutonium use in these reactors is limited by significant political, nuclear safety, economic and environmental factors.

Therefore, while the utilities and governments in these countries seek to attempt to move ahead with larger plutonium use programmes, global stockpiles continue to grow. In 1996, it is estimated that more than 20,000kg of plutonium will be reprocessed in Russia, France, the UK, and Japan. To put this figure in perspective, it is equivalent to more than 7% of the total amount of plutonium produced during 50 years of the Cold war. In 1997 this will rise towards 10%. Clearly, these are the reasons why the G7 and Russia would rather not discuss the real plutonium problem in April 1996.

WORLD REVIEW - SUMMARY

Although the number of large scale (over 100 tonnes heavy metal per year THMY) commercial reprocessing facilities remains relatively small at nine, reprocessing contracts at some of these facilities mean that many more countries for the first time will soon have significant stockpiles of weapons-usable plutonium.

The main obstacles however with MOX use in LWR's are: that MOX fuel costs are between 3 and 13 times more expensive than uranium fuel; significant technical, safety, environmental and public health problems are introduced due to the fuel fabrication, reactor use and waste storage of MOX fuel; and, the development of a MOX fuel cycle (including reprocessing plants, fuel fabrication facilities, nuclear reactors and waste storage facilities) is a major proliferation concern due to the extensive handling and transport of weapons-usable plutonium.

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TOM CLEMENTS
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As can be seen from Table one, most plutonium in 1993 was contained within the nuclear weapon states, though Japan and Germany already had significant stocks. The largest share of the total is contained within the nuclear weapon arsenals. A proportion of this material is being removed from nuclear warheads as disarmament agreements are implemented, and which certain governments and the nuclear industry are arguing should be used as MOX fuel in reactors. It is possible that the G7 and Russia will make this recommendation at the Nuclear Safety Summit.

FRANCE

France operates two large scale light water reactor (PWR/LWR) oxide reprocessing facilities, at La Hague in northern France, UP-3 and UP-2 800. Annual plutonium production capacity is between 12-13 tonnes. This production is split between domestic plutonium from French reactors operated, and foreign clients - Japan, Germany, Belgium and the Netherlands and Switzerland. In addition, a 400 THMy Magnox-fuel plant UP1 also operates at La Hague, separating up to 1 tonne each year. This facility is due to close in 1997/98.

As a result of the collapse of commercial Fast Breeder Reactor programmes, the demand side for French plutonium has radically altered over the past ten years. Confronted with growing stockpiles of plutonium the French utility, Electricité de France (EdF) has opted for the use of mixed plutonium/uranium oxide (MOX) fuel in PWRs. Although the reactors are not designed for MOX use, EdF has been licensed for sixteen 900 Mwe PWRs to use MOX. As of March 1st 1995, only seven of these reactors were using MOX.

The MOX that is used in these reactors is fabricated at the 15thMy Cadarache facility. In August 1994, the large-scale MOX plant MELOX began operation. This 120 tonnes per year facility, once fully operational will produce fuel primarily for EdF, but there is also a possibility that contracts with Japanese utilities will be signed in the next few years. To use all the MOX produced at MELOX, EdF have stated that it intends to increase the number of reactors licensed for MOX use by an additional twelve, bringing the total to twenty-eight reactors. Total plutonium consumption of both MOX facilities, is expected to be over 10 tonnes each year.

Despite the optimistic assessment of the French nuclear industry, EdF still expects to have a surplus of more than thirty-eight tonnes of plutonium by the year 2000. It is could be significantly more.

UNITED KINGDOM

There is no domestic demand for plutonium in the UK, apart from that required in nuclear weapons. Three reprocessing facilities operate in the UK - the 7 THMy Dounreay FBR plant, the Sellafield 1500 THMy B205 Magnox facility and the 700 THMy THORP oxide facility. The most significant for this study is the THORP facility, which after many years of technical and construction delay, was completed in late 1992. Due to domestic political opposition, the plant was only given permission to operate in March 1994.

Contracts with THORP are split between domestic and overseas. Over half THORP's first ten years capacity consists of contracts for Germany, Japan, Italy, the Netherlands, Spain and Switzerland.

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By the year 2003/4, THORP will have separated as much as 47 tonnes of plutonium, 41 tonnes of which will be for overseas clients. Although there is no domestic demand for plutonium fuel, the operators of THORP, the state-owned British Nuclear Fuels (BNF) hope to supply plutonium fuel, MOX, to their clients. Consequently, construction at the Sellafield site is being focused on completion of the Sellafield MOX Plant (SMP), with expectations that at least some of the 120 tHM capacity will be available by late 1997/1998. The SMP is based upon German technology from Siemens. Contracts between Germany and the UK were agreed during 1995, and a small Japanese contract was secured in January 1996. Future large contracts with Japan, are uncertain, given recent developments in Japan (see below).

JAPAN

Japan has the most ambitious plutonium programme in the world, and is one of the few countries still publicly committed to the commercial development of the FBR. However, their programme like all others world-wide, has been seriously effected by political, environmental, economic and technical problems. Although the US\$6 billion Monju prototype FBR began operation in April 1994, like all FBRs before it, the operators experienced significant technical problems. These peaked in December 8th, 1995, when the reactor suffered a major release of liquid sodium coolant from the secondary circuit. Fortunately, there was no injury or major release of radioactivity. However, the political implications for the entire Japanese plutonium programme are still unfolding. The reactor that the operators believed could not suffer an accident, has shattered public and political confidence in the ability of Japanese industry to safely manage plutonium.

Though plans for construction of the follow-on demonstration FBR has already been delayed until the first decade of the next century, that could now be extended further. Operation of the large-scale Rokkasho-mura reprocessing facility which will separate as much as 6-7 tonnes of plutonium annually, will now not begin until around 2004/5. Due to strong opposition to the transport of 1.7 tonnes of plutonium oxide on board the Akatsuki-maru in 1992 from France to Japan, utilities are now believed to be considering transportation of plutonium MOX fuel from Europe, in the belief that it will not generate significant opposition. The combination of all these factors, has led to a de facto Japanese plutonium storage policy at the La Hague, and THORP sites, with stocks growing annually.

As can be seen by comparing Tables one and two, Japan's plutonium stock could grow from 15 tonnes in 1993 to 70 tonnes by 2003. This will depend upon completion of Japanese utilities first decade reprocessing contracts with the UK and France. Since both BNFL and Cogema gain financially through expensive plutonium storage costs, it is likely that most contracted Japanese spent fuel will be reprocessed by 2003/4.

How much of this is transported back to Japan, and how much is stockpiled in Europe remains unclear. It is unlikely that Monju will operate much before 2000, leaving one other FBR (Joyo) in operation (plus limited demand from the Fugen Advanced Thermal Reactor). In addition, though utilities in Japan, similar to those in France and Germany, have opted for MOX use in LWRs, the Monju accident has directly effected the timing and scale of MOX use in these reactors. Plans for two rising to twelve reactors fuelled with MOX will not be realised by early next century, having now foundered on the fall-out from Monju. Most recently statements from 3 regional prefecture Governors, opposing the licensing of MOX use in reactors unless certain conditions are met. It is quite possible that no MOX use in LWRs will begin before 2000.

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Clearly, supply greatly exceeds demand. Unless Japan delays or cancels reprocessing contracts, and cancels its own domestic reprocessing plant, it will have a total stock of around 110-113 tonnes from around 2010. Even in the optimistic demand projections of the Japanese government, as much as 85 tonnes of this will be surplus to requirements.

GERMANY

German reprocessing contracts with La Hague and THORP over the next ten years will increase the country's stock to 49 tonnes of plutonium. Choices made in the 1970's to enter these contracts were based upon a number of factors, including: providing plutonium for a commercial FBR programme, waste management, and apparently attractive prices from the reprocessing companies.

The miscalculations in the volume of plutonium stocks returning to Germany and the lack of domestic demand for FBR led to the adoption of MOX for LWR's and BWR's. However, a number of factors have evolved that have led to much less MOX use than anticipated, and consequently an imbalance between large scale plutonium reprocessing and the capacity to fabricate and use MOX has been created. Since 1981, Germany has had no available domestic MOX capacity, since operation of a Siemens plant at Hanau was suspended. That facility has now been abandoned. The larger uncompleted MOX facility at Hanau, which cost almost 1 billion dollars, was abandoned in December 1995. As of March 1st 1995, eleven reactors in Germany were licensed to use MOX, but only five did so. Growing plutonium stockpiles at La Hague of over 12 tonnes in January 1996, will soon be added to by operation of THORP at Sellafield.

BELGIUM

Belgium currently has contracts for reprocessing with Cogema's La Hague plant, which will yield over 5 tonnes by the year 2003. Once again Belgium's plutonium programme is an example of over-supply, with annual demand not expected to be greater than 0.3 tonnes in the period 1996/7-2000. Consequently, this will give Belgium an excess stockpile of more almost 4 tonnes by the year 2003. It will take a further 13 years to consume this plutonium in Belgium reactors.

RUSSIA

Commercial reprocessing is centred at the Radiochemical Combine Mayak site at Chelyabinsk-40, now renamed Ozersk. A 600 tHM/y reprocessing plant, RT-1, has operated since 1976, when it was converted from military production. Throughput of VVER-440 reactor fuel in practise has been around 190 tonnes on average, with recent reports suggesting a decline to 100 tHM/y, this has yielded a total of around 27 tonnes by the end of 1994. There is almost no domestic demand for this plutonium. The Russian FBR programme is centred around BN-600 at Belyarskaya but this operates with HEU fuel not plutonium MOX. Plans for construction and operation of three BN-800 FBR's operating on plutonium MOX remain unrealised. In addition to the Chelyabinsk site, there are plans to complete the unfinished reprocessing facility at Krasnoyarsk-26. Construction of this facility was halted in the mid-1990's due to local opposition and financial restrictions from central government. The facility if it is ever built, is intended to reprocess 1500 tHM/y of fuel from Russian VVER-1000, as well as

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TOM CLEMENTS
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overseas clients. Discussions have been held with utilities from a range of countries, including: the Republic of Korea, Switzerland, Ukraine, and Taiwan.

A more immediate problem for those concerned about commercial plutonium use is an option under consideration by the Ministry of Atomic Energy, for converting dismantled nuclear warhead plutonium into MOX fuel. Despite all the acknowledged problems with MOX, Miratom appears to favour this option over any other. Currently a study is underway that if implemented would lead to the construction of a small 20 THM/y MOX plant at Cheybinsk, based upon Siemens technology. Russia has some specific problems due to the nature of its reactors. Only 22 of Russia's largest reactors are theoretically capable of handling MOX, eleven of these are of the RBMK type - thus using MOX would compound their already dangerous operating characteristics.

SWITZERLAND

By the year 2003/4, Switzerland will have acquired a stock of 9 tonnes of plutonium, through contracts at La Hague and Sellafield. Despite initial plans for MOX in all five of its reactors by the year 1998, doubts amongst utilities over the economic penalties of plutonium fuel use have contributed to expected delay's in MOX utilization. Currently, MOX supplied from Belgium, the UK and France, is used in two small PWR's.

SPAIN

Spain has contracts for 169 THM of spent fuel with the THORP facility. This will yield approximately one metric tonne of plutonium for return to Spain. There are however no plans for plutonium use in Spain's reactors. It should be noted that Spain's Vandellós magnox reactor had its spent fuel reprocessed in France, but not returned to Spain. It is believed that plutonium from this reactor entered the French military programme.

NETHERLANDS

The Netherlands has contracts with both the La Hague and THORP facilities, that once completed will yield about 2 metric tonnes of plutonium. As with Spain, there are no current plans for the use of this material, including in which location it will be stored.

PLUTONIUM MOX - REACTOR SAFETY AND PROLIFERATION CONSEQUENCES

It has been reported that the Nuclear Safety Summit will endorse the burning of plutonium from dismantled nuclear warheads in reactors - the MOX option. For a number of reasons this route poses a threat of greater nuclear proliferation, increased safety risks for reactors, additional health hazards for workers, and more problems for radioactive waste storage.

Perhaps the greatest obstacle to the MOX route for plutonium management is an economic, and therefore political, one. Global MOX production capacity by the year 2000 will be less than 350 tonnes each year. Although this is significant in terms of increasing the amount MOX in the world, all of this capacity is dedicated to fabricating MOX from commercial reprocessing - and even then it cannot deal with most of the commercial plutonium stocks. To convert plutonium from nuclear warheads on anything other than an experimental basis will require the construction of new large MOX facilities. On the basis that 100 tonnes of plutonium from warheads is to be converted to MOX, (50 tonnes each from Russia and the United States) it will require one 120 THM/y plant to operate at full capacity for 27 years. Currently there is no

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industrial scale MOX production capacity in Russia, and Site-300 at Ozersk, if ever built, will have an annual plutonium throughput of around 400kg. This facility would have to operate for over 100 years to convert 50 tonnes of Russia's plutonium stock. The United States Department of Energy is currently considering the options for the disposition of its stockpile of military plutonium. No MOX facility currently operates in the United States. Environmental opposition to plans in both the United States and Russia could prevent any large-scale move to MOX use.

Reactor Safety Implications

If the Nuclear Safety Summit does endorse MOX for military plutonium, it will further highlight the irrelevance of the Summit for improving the safety of nuclear reactors. The reason for this is that the very reactors that would be used to burn the MOX fuel in Russia, are some of the most dangerous reactors operating and using plutonium fuel reduces further the weak safety margins of these plants. The preferred reactors in Russia for MOX use, from a nuclear physics perspective, are the six VVER-440s, of which 4 are the 230 series. Even the IAEA classifies these as being extremely unsafe, and it is unlikely that even MINATOM would consider introducing plutonium fuel into these reactors. Other options also have potentially severe consequences. For VVER-1000s, the problem of reduced pressure vessel size has been countered by moving to a three year fuel cycle. Introducing MOX into these reactors would eliminate the safety benefits of this, thus increasing the probability of a positive temperature coefficient, leading to a power excursion and severe accident. The only other option would be to move ahead with the construction of the BN-800 series of FBR's in Russia. Though this may MINATOM's preferred path, not only are there no funds for these, but safe reliable operation of such reactors has not been demonstrated.

It would indeed be a supreme irony if leaders from the G7 and Russia, meeting for the first time on exclusively nuclear matters, endorsed an option that would dramatically reduce the safety of some of the most dangerous reactors in the world.

Proliferation and Security

Any commitment to increase MOX production and use in reactors, will lead to an increased risk of nuclear proliferation. The plutonium contained within the MOX will either be weapons-grade or blended-down reactor grade. However, whatever its grade it will remain weapons-usable. It is worth mentioning that it has yet to be demonstrated by the International Atomic Energy Agency (IAEA) that it is possible to adequately safeguard plutonium MOX facilities. As fabrication plants for MOX pose a proliferation threat so to does the transport of the MOX to reactor sites. For example, during 1995 the option to have plutonium from Russia shipped to the Hanau MOX facility in Germany, was promoted by the German Foreign Ministry and Siemens (the builder of the uncompleted MOX plant). Highlighting the logistical problems of such an option, it was reported that a transport plan drafted by Siemens envisaged 70 transports every year, involving 4-5 tonnes of plutonium, for ten years. The transport methods considered included by rail through eastern and central Europe, by sea through the Baltic, and by air. Fortunately, the Hanau option was abandoned in December 1995.

In addition, countries now expanding their MOX use programmes are now confronted with the security problem posed by the storage of large quantities of plutonium MOX at reactor sites. Stockpiling plutonium MOX fabricated from dismantled nuclear warhead material raises very serious security concerns. This further raises the spectre of

**GREENPEACE, WASHINGTON, DC,
TOM CLEMENTS
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draconian measures applied by government agencies seeking to protect stockpiles of such material.

The consequences of producing hundreds of tonnes of weapons-usable MOX, will increase the probability that material will be diverted or stolen. After the past two years when nuclear smuggling, both real and imagined, has focused international attention in the threats posed by nuclear materials, it makes no sense to increase the diversion pathways for plutonium.

CONCLUSION

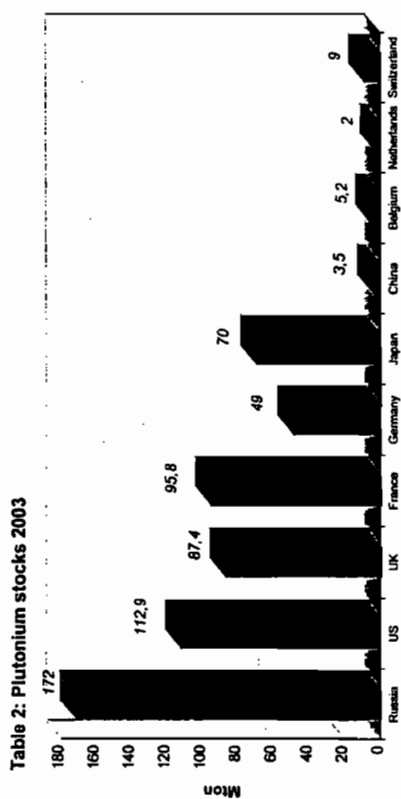
The unique dangers posed by weapons-usable fissile materials should not be underestimated. No excuses are therefore required when no simple solution is available for dealing with these materials. However, to pretend that the problem only exists in Russia, or that commercial plutonium is somehow a legitimate industrial process, highlights that the G7 and Russia have yet to come to terms with the unique threat posed by these materials. After all, it is these very nations within the group of G7 and Russia that have produced the problem, either as a direct result of the nuclear arms race, or of commercial nuclear programmes. The international community should therefore treat with extreme caution any solution offered by these same states at the Moscow Nuclear Safety Summit.

This summary paper has sought to highlight the fundamental contradiction of the G7 nations and Russia, when as expected they endorse the MOX option for dealing with weapons-usable plutonium. While plutonium production for explicitly military purposes has almost ceased, production for commercial purposes is rapidly expanding. No distinction can be made between these two types of plutonium - it is all weapons usable. The G7 and Russia by ignoring this reality will expose the lack of real political will to overcome the powerful interests of the global nuclear industry.

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TOM CLEMENTS
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The figures are inclusive of plutonium loaded into MOX fuel, either loaded or stored for use in FBR and Thermal reactors. For all figures there's at least a ten percent uncertainty margin with the exception of the figure for the US.

Most of the plutonium listed in the non-nuclear weapon states, refers to ownership, in most cases the plutonium is currently stockpiled at three sites: Sellafield (UK), La Hague (France) and Oznorsk (Russia). It should be noted however that all of the plutonium under contract at these sites is eventually to be returned to the country of origin.

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- Russia +/- 20%, Albright, et al. Figures are at December 31, 1993.
SIPRI Yearbook 1995.
- US DOE, February 6th 1996:
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+/- 30%, figures for Dec. 31, 1993.
- France Albright, World Inventory of Plutonium and Highly Enriched Uranium, SIPRI, 1993.
Cogenma, June 1, 1995; SIPRI Yearbook 1995.
figure for Dec. 31, 1993; Albright, 1995.
- China Albright, World Inventory of Plutonium and Highly Enriched Uranium, SIPRI, 1993.
- Other Countries Cogenma, June 1, 1995; SIPRI Yearbook 1995.

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May 31, 1996

DOE-Office of Fissile Materials Disposition
c/o SAIC-PEIS
P.O. Box 23786
Washington, DC 20026-3786

To Whom it Concerns:

Attached are documents which I request be included as comments on the Storage and Disposition of Weapons-Usable Fissile Materials - Draft Programmatic Environmental Impact Statement:

1. The Problems of Disposing of Military Plutonium as MOX Fuel
2. MOX: A Background Briefing
3. The Use of Mixed Oxide Fuel Rods Containing Plutonium in Light Water reactors
4. MOX or The Plutonium Aberration
5. Industrial and Strategic Aspects of the Plutonium Fuel Cycle in France
6. various new articles on MOX

Thank you very much.

Sincerely,

Tom Clements

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1/15.00.00

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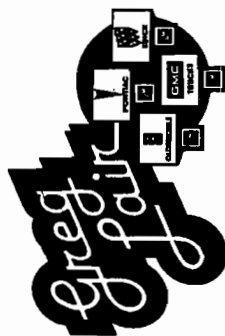
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15 00 00 Comment Number 1

Comment noted. The documents referred to are included in the PEIS Administrative Record. Further, this research information was analyzed for comments specific to this PEIS, and is available to the decisionmaker. No comments specific to the PEIS were identified in these documents.

GREG LAIR, INC., CANYON, TX,
GREG LAIR
PAGE 1 OF 2



April 22, 1996

U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, DC 20026

RE: Pantex

To Whom It May Concern:

Greg Lair, Inc., of Canyon, Texas, supports the selection of Pantex for weapons assembly and disassembly activities. We strongly endorse the continuation of high explosives (HE) functions at Pantex, and we also plan to move these functions to the national laboratories. Since Pantex is the most cost-effective Department of Energy (DOE) facility and enjoys the strongest local support, we endorse the addition of other environmentally sound stewardship and management functions at Pantex. Furthermore, we believe that Pantex should be chosen as the location for fissile materials storage and disposition functions.

Pantex must retain HE capabilities to process the inventories already on site from dismantling. Millions of taxpayer dollars have been spent recently at the site to ensure that all the functions are safe and efficient. It is the only cost-effective choice available. Moreover, it would be highly advantageous to have all HE functions situated on the site to upgrade existing weapons systems; in the event of weapons production, on-site HE functions will be a necessity. High explosives functions must remain at Pantex.

Since Pantex is the most cost-effective DOE facility and enjoys the strongest local support, it is an appropriate location for the HE functions. For all other functions, DOE should establish facilities to complement activities at the national laboratories. The location of additional defense-related activities at Pantex would ensure that core technical capabilities are preserved at a location that can secure them at the most efficient cost to the taxpayer. The Department of Energy must view accurate budgetary comparisons between Pantex and other sites. Life-cycle analysis would assist in these comparisons to ensure the inclusion of all capital, transportation, training, remediation, and all costs.

GREG LAIR, INC.

CANYON E-WAY & BUFFALO STADIUM RD. • P.O. BOX 510 • CANYON, TEXAS 79015 • 806-656-2563

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support of Pantex. Decisions pursuant to potential future missions for storage and disposition at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

07 02 00

Comment Number 2

Cost data, along with technical and schedule data, were provided for public comment in a Technical Summary Report in late July 1996.

1/08.03.01

2/07.02.00

M-050

GREG LAIR, INC., CANYON, TX,
GREG LAIR
PAGE 2 OF 2

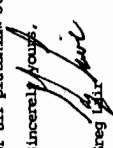
April 22, 1996

Greg Lair, Inc.
P.O. Box 510
Canyon, TX 79015

Page -2-

We believe that Pantex should be chosen as the location for plutonium storage. It seems that Pantex is the only facility that has handled assembly and disassembly operations in a safe and efficient manner. If cost savings are considered, Pantex is the only choice for plutonium storage. The facility is already storing plutonium on-site, and has strived significantly to ensure not only safety but environmentally sound practices as well. Not only has the facility made recent upgrades to storage facilities, storage container usage and reconfiguration, and security enhancement, Pantex could also upgrade facilities for any and all storage options being considered by the DOE using processes already in place with minimal cost and difficulty. It makes little sense to re-create storage facilities at another site and then unnecessarily transport large amounts of plutonium across the country from Pantex. The cost and possible consequences of this decision would be enormous. Pantex also should be designated the preferred site for any disposition options and related function. Furthermore, it is not feasible, from any perspective, to site strategic storage at one site and surplus at another. Pantex has the necessary safety, security, and surveillance capabilities to accommodate an expanded role with minimal costs, and it is the production site closest to Los Alamos, the planned fabrication site.

Based upon the above reasons and for the continued benefit of the entire community, Greg Lair, Inc. urges the Department of Energy to designate Pantex as the preferred alternative site for all existing and new stockpile management and stewardship functions as well as consolidation of all plutonium storage and disposition and any related functions.

Sincerely,

Greg Lair

GL/em

1/08.03.01
cont.

M-050

HANFORD ACTION OF OREGON, PORTLAND, OR,
TERRY HAMMOND
PAGE 1 OF 2

Terry Hammond
Hanford Action of Oregon
4545 NE 78th
Portland OR 97218

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

May 10, 1996

Re: Comment on Plutonium Disposition

Dear DOE:

Since attending the recent DOE meeting in Portland, Oregon, concerning plutonium disposition, I have just been informed of certain business support for the reactor alternative. I wish to record my determined opposition to this choice.

1. After decades of denial, the U.S. government is just now beginning to admit to the perils of nuclear radiation and the deaths it causes. Thousands of babies are being killed, thousands of adults are developing horrible radiation-caused diseases, farm animals are suffering disgusting mutations and infertility. With uranium mining, processing, weapons testing and deployment, and energy reactors, the nuclear establishment is conducting random genocide on the human population, while permanently destroying the possibility for healthy life on the planet. This practice must stop. Do not encourage the perpetuation of the nuclear establishment. In the tradition of the Nuremberg trials after W.W.II, consider your decisions a matter of personal accountability.

2. There is still no plan for permanent disposition of the mounting tons of nuclear waste in this country. Rather than contribute to the problem by creating more waste with the reactor alternative (as your PEIS indicates it will), some definite line of action must be created that allows us to feel we are moving in the right direction, and which provides a model for the rest of the world. You must stop the forward momentum of the nuclear establishment.

3. With childish disregard for the hazardous mess produced by their activities, both the military and energy sectors of the nuclear establishment have never included adequate management of nuclear wastes in their operating budgets. Recent news reports indicate that funds set aside to dismantle reactors are nowhere near enough to cover projected costs. Once again, the U.S. taxpayer is exposed to pickup the extra bill, prodded by dire concerns for health and safety. The skyrocketing direct costs don't even include all the costs for generating reports and holding meetings associated with dangerous nuclear-

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

15 00 00

Comment Number 2

Comment noted.

01 06 00

Comment Number 3

Comment noted. DOE has the responsibility to find a path forward for surplus Pu disposition to support the President's Nonproliferation Policy. All the alternatives would take the Pu to an end state that produces some nuclear wastes. It is the intention of DOE to minimize waste production in the facilities that will be used for Pu disposition.

1/08.03.01

2/15.00.00

3/01.06.00

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**HANFORD ACTION OF OREGON, PORTLAND, OR,
TERRY HAMMOND
PAGE 2 OF 2**

waste disposition. The economic side of the nuclear nightmare is already way out of control. You must get a handle on what we have now without encouraging the kinds of facilities that are generating enormous expense directed at the innocent American taxpayer.

4. It would be nice if DOE could direct its reports to energy sources that don't need to talk about death and illness, catastrophic accidents and evacuation. The public anger and distrust of the U.S. government is increasing. The DOE, like its predecessors in the nuclear establishment, has a contemptible reputation, with a history of deceit, denial, cover-up and coercion. We appreciate recent efforts to bring some sunshine into your activities. Please help us regain confidence in DOE, while tackling a huge problem that concerns all of us. We need you. Be a leader in changing course and dismantling the deadly nuclear establishment.

Thank you for your consideration on this matter.

Sincerely,



Terry Hammond
Hanford Action of Oregon

3/01.06.00
cont.

M-210

HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
PAGE 1 OF 11

HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

Attendance

US Dept of Energy
US Environmental
Protection Agency
Department of Energy

David Nulton

Director, NEPA Compliance and Outreach
Office of Fissile Materials Disposition

Department of Energy

PO Box 23786

Washington, DC 20026-3786

Sent by Facsimile to 1-800-820-5156 and by US Mail

May 3, 1996

Dear Mr. Nulton:

Re: Storage and Disposition of Excess Weapons Usable Plutonium and Special Nuclear

Materials (SNM) (HAB Advice #46)

The draft Plutonium Programmatic Environmental Impact Statement (PEIS) indirectly considers

Hanford as a potential site for certain activities within the scope of the plutonium safe storage

and disposition program by the virtue of the site's current capability and plutonium possession.

The Hanford Advisory Board is opposed to the piecemeal approach to nuclear material storage

and disposition like that taken in the PEIS on plutonium disposition. We have on three previous

occasions advised DOE to USDOE urging an integrated public discussion on these issues.

(Board Advice #13, 34 and 38) We have a commitment from USDOE leadership to initiate such

a process. Therefore, a ROD on the narrow choices presented in this EIS is premature pending

the National Equity Dialogue. The Board is opposed to the use of the bore hole option at

Hanford. At this time, the Board has not expressed a preference for one of the other disposal

options. However, the Board does have a number of values/issues which relate to a plutonium

(Pu) and spent nuclear material (SNM) program. Many of these values/issues have been

previously provided to you as advice or recommendations for other Hanford programs. Those

values are:

1. Any plutonium or SNM storage or disposal program must be compatible and integrated

with the TPA commitments and milestones and should not affect the rate or funding of

cleanup. The program would have the safe disposition of Hanford plutonium as a

priority.

HAB Comments Advice #46

Subject: Storage and Disposition of Excess Weapons Usable Plutonium and Special Nuclear Materials (SNM)

Adopted: May 2, 1996

Page: 1

Contact: Constance Norwest, Facilitation Team

800 W. Sixth Avenue, Suite 342, Portland OR 97208-3715

Phone (503) 243-2593 Fax (503) 243-3883

08 02 00 Comment Number 1

The Department of Energy acknowledges the commentor's support for coordination and increased understanding of decisions to be made concerning the storage and disposition of weapons-usable fissile materials. However, the National Dialogue Project is beyond the scope of this PEIS.

08 03 01 Comment Number 2

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

11 00 01 Comment Number 3

Comment noted. DOE's Fissile Materials Disposition Program is an integrated effort that will require the participation of a number of DOE sites that have weapons material experience. DOE acknowledges the commentor's concern about the potential effect that selection of Hanford for new missions could have on the Hanford cleanup program. It is DOE's intent that the implementation of Fissile Materials Disposition Program decisions will have little or no impact to ongoing cleanup programs. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input. The decision process will also give consideration to existing agreements between DOE, the State of Washington, and the Environmental Protection Agency (EPA).

1/08.02.00

2/08.03.01

3/11.00.01

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2.	Any plutonium program assigned to Hanford must be fully funded from new funding sources. This funding should include appropriate site infrastructure and overhead costs. Funding should fully cover the cost of treatment, storage and disposal of any new waste streams.	4/07.00.00
3.	The acceptance of plutonium at Hanford should not delay, defer, or negatively impact Hanford cleanup.	5/11.00.01
4.	Appropriate local and regional public information and involvement programs must be conducted by the agencies to ensure that the public is fully informed of the risks, hazards and impacts of such a program. This would be part of the national dialogue on all nuclear materials (noted above) prior to assignment of nuclear materials to a specific site.	6/08.02.00
5.	Any permit or plan approval for new Hanford programs/activities must be fully integrated and must comply with all State of Washington public health and safety rules and regulations.	7/08.03.00
6.	Equity impacts must be addressed in the assignment of new nuclear materials (including plutonium) to Hanford.	8/01.00.00
7.	The transportation of plutonium and special nuclear materials to Hanford storage will require careful planning of routes and consideration of weather emergencies to minimize the likelihood of an accident. Emergency preparedness for minimizing the impacts from an accident will require financial support from DOE for state, tribal, and local involvement, including adequate equipment and training. When materials are shipped, timely notification should be provided to transportation agencies.	9/10.01.00
8.	The choice of disposal options re: Pu will be a determinant for sites such as Hanford. Prior to the choice of a disposal option, complete characterization of the material and the impacts of short and long-term disposition technologies must be reviewed by the public and regulatory agencies.	10/08.02.00
9.	Acceptable processing techniques including waste processing must be developed as an integrated part of any new Hanford storage and disposal program. Permanent disposal of waste plutonium at Hanford is not acceptable.	11/09.11.01

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07 00 00 Comment Number 4

Funding for all alternatives will be through the Government's budget process. It is not a part of the environmental analysis.

11 00 01 Comment Number 5

The Department of Energy will not begin implementation of the Proposed Action at any site without having given full consideration to the environmental, cost, schedule and policy analyses, public comments, and agreements with various states regarding the clean-up activities on the sites. Therefore, implementation of the Proposed Action is not expected to cause adverse impacts to ongoing programs at the selected site(s).

08 02 00 Comment Number 6

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.

08 03 00 Comment Number 7

It is recognized that the decision to locate any of the alternatives at a site would require coordination with State and local officials on a variety of areas including the mission of the site.

01 00 00 Comment Number 8

Comment noted. Equity will be considered in DOE's decisionmaking process along with all other factors.

HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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10. A "systems" analysis approach should be utilized to select the most effective method for processing and interim storage. This analysis should adequately address public and worker health and safety and environmental issues.	12/08.03.00
11. If a plutonium disposition mission is assigned to Hanford, every effort should be made to use existing workforce, facilities, technologies, and other resources.	13/09.00.01
Finally, we note that this PEIS does not address cumulative impacts of nuclear material movement and disposition as required by NEPA.	14/08.00.00

The Health, Safety and Waste Management Committee of the HAB looks forward to further discussions and working with you on this issue. The Board looks forward to your written response, as called for in our charter.

Very truly yours,

Merilyn B. Reeves, Chair
Hanford Advisory Board

attachments: Board Advice #13, 34 and 38

cc: Thomas Grunahly, DOE
John Wagoner, DOE
Alice Murphy, DOE
Chuck Clarke, EPA
Mary Riedland, Ecology
Cindy Kelly, Designated Federal Official
Linda Lingle, Site Representative
Jim Mecca, DOE (by fax)
The Oregon and Washington Congressional Delegations

F-030

10 01 00 Comment Number 9

Logistical planning and meteorological surveillance are standard concerns which normally receive a great deal of attention during transportation operations such as this; transfer of materials to Hanford would hold no exceptions. Emergency preparedness personnel (that is, Emergency Response Teams) will be supplied with the necessary equipment and training commensurate with Department of Transportation (DOT), DOE, and NRC regulations. Sufficient funding for these concerns will be available to satisfactorily ensure that potential contingencies be dealt with in an effective and timely manner. DOE provides liaison with appropriate agencies for special nuclear material shipments. However, due to their classified nature, specific information on times and dates cannot be provided.

08 02 00 Comment Number 10

Before and after decisions are made on a disposition technology or technologies, DOE will conduct studies and technical demonstrations to fully understand the full impact of disposition actions. This information will be made available to the public, as appropriate.

09 11 01 Comment Number 11

The conceptual designs for the storage and disposition facilities have, as part of their design, waste management facilities that would treat and package all waste generated into forms that enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State statutes and DOE Orders. As noted in Section 4.1.10 of the PEIS, waste management activities that would support the long-term storage or disposition of weapons-usable fissile materials were assumed to be per current site practice. Thus, only low-level waste (LLW) and possibly some solid nonhazardous waste was assumed to be disposed of onsite. Any future waste management facilities that may be required to support the long-term storage or disposition of weapons-usable material would be coordinated with any decisions in the waste-type-specific RODs resulting from the Waste Management PEIS and respective site-specific NEPA documentation.

HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Commission Act

Charles Clinton, Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, WA 98101

Mary Riveland, Director
Washington Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

John Wagner, Manager
Department of Energy, Richland Operations
PO Box 350 (A1-50)
Richland, WA 99352

February 8, 1995

RE: Off-Site Mixed Waste Acceptance

Dear Messrs. Clarke and Wagner, and Mr. Riveland:

The following advice was adopted by the Hanford Advisory Board on February 3, 1995.

The State of Washington and U.S. EPA should not allow the U.S. Department of Energy or U.S. Department of Defense to transfer to the Hanford site any "Mixed (hazardous and radioactive) Waste" unless the following criteria are met:

1. A general condition of permit and plan approval and subsequent off-site waste acceptance in Washington State should be on-going substantive compliance with Washington Department of Ecology Waste laws and the terms, conditions, and schedules of permits, consent orders and clean-up agreements (e.g. the Tri-Perry Agreement) between the DOE and the State.
2. Acceptance of off-site waste must be contingent on existing facility capacity and on availability of funding to handle processing and storage costs, while having a neutral or positive impact on Hanford clean-up.
3. In all instances where DOE proposed to treat off-site wastes at Hanford, a written reciprocal agreement should be required between the State of Washington, the state of origin of the off-site waste and the Department of Energy.

HAFO Chairman Charles Clinton
Subject: Off-Site Mixed Waste Acceptance (Health, Safety & Waste Management Committee)
Approved: February 3, 1995, Letter to DOE

Page 1

800 397 6466, Suite 140, Portland OR 97208-3735
Contact: Catherine Riveland, Facilities Team Phone (503) 340-3465 Fax (503) 340-1483

F-030

08 03 00 Comment Number 12

Comment noted.

09 00 01 Comment Number 13

Comment noted and will be taken into consideration when DOE is ready to select sites to implement Pu disposition technologies.

08 00 00 Comment Number 14

The Department of Energy has determined that, based on historical trends and regulatory constraints, impacts associated with transportation of nuclear materials are unlikely and not otherwise significant. Therefore, no cumulative analysis of transportation impacts is performed. The cumulative impacts analysis is located in Section 4.7 of the PEIS.

15 00 00 Comment Number 15

The PEIS analyzes the storage of non-surplus weapons-usable fissile materials and surplus Pu pending disposition. All materials are assumed to have been stabilized and packaged according to recommendations made by the Defense Nuclear Facilities Safety Board (DNFSB) prior to storage, and are not considered waste until disposition actions have been completed.

4. In deciding whether to approve storage, technical, economic and equity concerns should be addressed. Prolonged storage of off-site wastes prior to treatment, or of post-treatment residuals, generally should not be approved.
5. No pretreatment storage should be allowed at the receiving site unless it has been approved in the written reciprocal agreement between the shipping and receiving states.
6. Plans and schedules to treat off-site wastes should be approved only in instances where there is a binding legal obligation on the part of DOE for primary and secondary off-site storage facilities designed to receive post-treatment residuals before wastes are allowed to be shipped to Hanford. Plans and schedules should specify that generally no residuals will be stored or disposed of at Hanford. In the event of substantial noncompliance with Washington Dangerous Waste Law requirements, or failure to have off-site facilities available for return of post-treatment residuals, off-site waste will not be accepted at Hanford. Lacking specific agreement between the state, DOE and state of origin, waste residuals should be returned to the site of origin or other compliant facilities to be specified in plans and schedules.
7. When reviewing requests from other sites/states to accept mixed wastes for treatment at Hanford, the sending sites's treatment plan should be scrutinized to determine whether there has been thorough consideration of on site treatment and pre-shipment storage. Off-site wastes should not be accepted for treatment where such analysis is lacking or not compelling, unless it is otherwise approved in the reciprocal agreement between the sending and receiving states.
8. Receipt of any off-site wastes for treatment should require submission by shipping state of a schedule for shipment, treatment, and post-treatment residuals management, and prior written approval by the State of Washington.
9. Transport of off-site waste to Hanford for treatment will require careful planning of routes and consideration of weather emergencies to minimize the likelihood of an accident. Emergency preparedness for minimizing the impacts from an accident will require financial support from DOE to state, tribal and local involvement, including adequate equipment and training. When materials are shipped, timely notification should be provided to transportation agencies.
10. Cumulative impacts (e.g. of other wastes types) must be analyzed and considered in decisions concerning the movement and treatment of DOE mixed wastes. DOE

15/15.00.00
cont.

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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must fully disclose all projected waste types and quantities that maybe shipped to Hanford prior to any consideration by Washington of TSD permits for mixed wastes generated at other facilities. This information must be part of the PEIS and Draft Site Treatment Plan public comment/public participation process, and of an inter-regional and inter-site advisory board dialogue, prior to development of final Site Treatment Plans and any agreement by Washington State to accept off-site wastes.

11. Hanford off-site waste acceptance criteria must include provision for inspection and payment of appropriate permit fees to cover all state costs, including inspection of pre-shipping procedures. Existing Mixed Waste facilities at Hanford must be in substantial compliance with the Tri-Party Agreement milestones, other orders or agreements and RCRA or state law requirements in order for permits to be issued or amended to allow off-site Mixed Wastes to be treated, stored or disposed of at Hanford.

The Board and its Health, Safety & Waste Management Committee will consider both additional information that has not been presented to date as well as agencies' responses to this advice. Based on that additional information and agency responses, it is expected that the Board will offer additional advice and recommendations to the U.S. Department of Energy, USEPA and the Department of Ecology.

The Board would like the State of Washington to explore options to control other materials (including low level waste, plutonium or transuranic (TRU) contaminated waste) intended for transport by DOE to Hanford for storage, treatment and/or disposition.

Very truly yours,

Marilyn B. Reeves

Marilyn B. Reeves, Chair
Hanford Advisory Board

cc: Thomas Grumbly, Department of Energy

15/15.00.00
cont.

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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08 00 00 Comment Number 16

This comment is outside the scope of the PEIS and, therefore, has been referred to EM for response.

HANFORD ADVISORY BOARD

A Hanford Advisory Board, Chartered under the Federal Advisory Commission Act

Thomas Grubbly
Assistant Secretary for Environmental Management
Department of Energy
1000 Independence Avenue SW
Washington D.C. 20585

November 3, 1995
Re: Waste Management PEIS and Public Involvement, HAB Comments Advice #14

Dear Mr. Grubbly:
At its November 2-3 meeting, the Hanford Advisory Board adopted the following advice relating to the Waste Management PEIS and public involvement.

Advice
The Hanford Advisory Board is concerned by USDOE Headquarters' inadequate planning and decisions for public involvement and information for the Waste Management PEIS. Publicity to promote public involvement has not met the standard expected. There is a need for timely and meaningful disclosure to the public in the Northwest of all relevant waste and nuclear materials movement actions, impacts and alternatives for the Waste Management Programmatic EIS.

This Board expressed strong reservations about USDOE's plans to hold one single multi-site videoteleconference hearing for public comment from 6 cities. These concerns were not heeded nor mitigated.

The Board is upset that DOE-HQ refused to place any notice advertising in major newspapers for 5 of the 6 cities where the hearing will be held, other than in the legal notices.

Northwest stakeholders and the Hanford Advisory Board have urged USDOE to disclose, and integrate impact and alternative analyses into one public document and process, all wastes and nuclear materials which USDOE is considering treating, storing and disposing at Hanford and throughout the complex. You previously committed at the Platteville Roundtable in Seattle to such integration and disclosure. We remain concerned that such an integrated approach disclosing all interrelated and cumulative impacts should be available in time for public input to this major WMD Programmatic EIS.

Therefore, the HAB urges USDOE to utilize an independently facilitated inter-site

Page 1

HAB Comments Advice #14
Subject: Waste Management PEIS and Public Involvement
Adopted November 3, 1995

800 875 5444, Suite 100, Portland OR 97209-1705 Contact: Catherine Redmond, facilitator Team Phone (503) 342-3480 Fax (503) 342-3483

16/08.00.00

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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stakeholder planning process to: cooperatively develop a meaningful integrated public participation process on the Department's proposed actions to ship for storage, treatment or disposal of DOE's nuclear and hazardous wastes and nuclear materials. The HAB requests DOE to keep the WMP/ELS comment period open to implement any process resulting from the November 29th iterative meeting.

16/08.00.00
cont.

The Board looks forward to your written response, as called for in our charter.

Very truly yours,


Marilyn B. Reeves, Chair
Hanford Advisory Board

cc: Chuck Clarke, EPA
Mary Riveland, Ecology
John D. Waggoner, Manager
Cindy Kelly, Designated Federal Official
Linda Lingde, Site Representative
The Oregon and Washington Congressional Delegations

HAB Comment Action #24
Subject: Waste Characterization, TSD and Public Involvement
Adopted November 29, 1995

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

Thomas P. Grumbly
Assistant Secretary for Environmental Management
Department of Energy
1000 Independence Avenue SW
Washington DC 20585

December 8, 1995

RE: Draft Waste Management Programmatic Environmental Impact Statement
(DOE/EIS-0200-D)

Dear Mr. Grumbly:

The Hanford Advisory Board believes the following advice reflects the criteria DOE, EPA, WDOE, should use in selecting and negotiating alternatives. This advice is identical to HAB comments advice #11 on "Off-Site Waste Acceptance" adopted on February 3, 1995, and forms the basis for this additional advice and recommendations.

The State of Washington and U.S. EPA should not allow the U.S. Department of Energy or U.S. Department of Defense to transfer to the Hanford site any hazardous and radioactive waste unless the following criteria are met:

1. A general condition of permit and plus approval and subsequent off-site waste acceptance in Washington State should be on-going substantive compliance with Washington Dangerous Waste laws and the terms, conditions, and schedules of permits, consent orders and clean-up agreements (e.g. the Tri-Party Agreement) between the DOE and the State.
2. Acceptance of off-site waste must be contingent on existing facility capacity and on availability of funding to handle processing and storage needs, while having a neutral or positive impact on Hanford clean-up.
3. In all instances where DOE proposed to treat off-site wastes at Hanford, a written reciprocal agreement should be required between the State of Washington, the state of origin of the off-site waste and the Department of Energy.
4. Technical, economic and equity concerns should be addressed in deciding whether to approve storage. Prolonged storage of off-site wastes prior to treatment, or of post-treatment residual, generally should not be approved.

HAB Comments Advice #11
Adopted Draft Waste Management Programmatic EIS (DOE/EIS-0200-D)
Adopted December 14, 1995

This advice reflects H.A.B. comments for this specific topic, and is not intended to be used as a precedent for other subjects.

DOE PW 1420, Item 142, Period 08, 07/08-10/15
Contact: Customer Relations, Information Team
Phone (202) 403-1441 fax (202) 403-1440

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
PAGE 10 OF 11

5. No pretreatment storage should be allowed at the receiving site unless it has been approved in the written reciprocal agreement between the shipping and receiving states.
6. Plans and schedules to treat off-site wastes should be approved only in instances where there is a binding legal obligation on the part of DOE for primary and secondary off-site storage facilities designed to receive post-treatment residuals before wastes are allowed to be shipped to Hanford. Plans and schedules should specify that generally no residuals will be stored or disposed of at Hanford. In the event of substantial noncompliance with Washington Dangerous Waste Law requirements, or failure to have off-site facilities available for return of post-treatment residuals, off-site waste will not be accepted at Hanford. Lacking specific agreement between the state, DOE and state of origin, waste residuals should be returned to the site of origin or other compliant facilities to be specified in plans and schedules.
7. When reviewing requests from other sites/states to accept wastes for treatment at Hanford, the sending site's treatment plan should be scrutinized to determine whether there has been thorough consideration of on site treatment and pre-shipment storage. Off-site wastes should not be accepted for treatment where such analysis is lacking or not compelling, unless it is otherwise approved in the reciprocal agreement between the sending and receiving states.
8. Receipt of any off-site wastes for treatment should require submission by shipping state of a schedule for shipment, treatment, and post-treatment residuals management, and prior written approval by the State of Washington.
9. Transport of off-site waste to Hanford for treatment will require careful planning of routes and consideration of weather emergencies to minimize the likelihood of an accident. Emergency preparedness for minimizing the impacts from an accident will require financial support from DOE to state, tribal and local involvement, including adequate equipment and training. When materials are shipped, timely notification should be provided to transportation agencies.
10. Cumulative impacts (e.g. of other wastes type) must be analyzed and considered in decisions concerning the movement and treatment of DOE wastes. DOE must fully disclose all projected waste types and quantities that may be shipped to Hanford prior to any consideration by Washington of TSD permits for wastes generated at other facilities. This information must be part of the PEIS and Draft Site Treatment Plan public comment/public participation process, and of an inter-regional and inter-site advisory board dialogue, prior to development of final Site Treatment Plans and any agreement by Washington State to accept off-site wastes.
11. Hanford off-site waste acceptance criteria must include provision for inspection and payment of appropriate permit fees to cover all state costs, including inspection of pre-

HAB Comment Advice #78
Subject: Draft Waste Mgmt Programmatic EIS (DOE/OS-
00007)
August/December 14, 1991

This advice represents HAB comments for this specific topic. It should not be taken as an endorsement or disapproval by the Board, nor should it be taken as an endorsement or disapproval by the Board, nor should it be taken as an endorsement or disapproval by the Board.

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HANFORD ADVISORY BOARD, PORTLAND, OR,
MERILYN B. REEVES
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shipping procedures. Existing Waste Facilities at Hanford must be in substantial compliance with the Tri-Party Agreement milestones, other orders or agreements and RCRA or state law requirements in order for permits to be issued or amended to allow off-site wastes to be treated, stored or disposed of at Hanford.

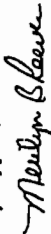
The HAB is concerned that the WMPFIS has used the Baseline Environmental Management Report (BEMR) as its source for estimated waste volumes. We urge USDOE to work with individual sites to verify and validate these estimates, as well as other identified assumptions.

USDOE should develop an effective decision-making process to integrate those EISs dealing with waste storage, treatment and disposal from USDOE's facilities. This process must be designed in a way that will earn the agreement of the affected states and Indian nations, and the support of SSABs and other affected stakeholders; this process must also contain a strong public involvement element. Please refer to HAB Advice #34, requesting an integrated public participation process. The SSABs can play a key role in public involvement, but it must be augmented by a broader outreach program. USDOE should work with stakeholders to ensure that their values are factored into alternatives being considered in the WMPFIS. We have attached two documents ("The Future for Hanford: Uses & Cleanup" from the Future Site Uses Working Group and the Final Report of the Hanford Tank Waste Task Force) which identify the values of Hanford stakeholders.

The Hanford Advisory Board urges the Washington State Department of Ecology and the U.S. Environmental Protection Agency be fully involved in decisions that would impact the Hanford site, particularly in decisions that could compete with or detract from the site's cleanup mission and the resources it requires.

We look forward to your written response as is called for in our charter.

Very truly yours,



Marilyn B. Reeves, Chair
Hanford Advisory Board

cc: Chuck Clarke, U.S. Environmental Protection Agency, Region 10
Cindy Kelly, Designated Federal Official
Linda Lingle, Site Representative
Mary Riveland, Washington Department of Ecology
John Wigour, Department of Energy - Richland Operations
The Oregon and Washington Congressional Delegations

HAB Comments Advice #38
Revised Draft Waste Management EIS (DOE/EIS-
0286-D)
Adopted December 1-4, 1993

^{Page 2}
This advice represents HAB comments for this specific topic. It
should not be taken out of context in interpretation Board
agreement on other subject matters.

HANFORD COMMUNITIES, RICHLAND, WA,
JOSEPH C. KING
PAGE 1 OF 7

Hanford Communities

Richland • Enumarick • Pato • West Richland • Benton City • Benton County

P. O. Box 190, Richland, WA 99353
Telephone (509) 842-7248 Fax (509) 842-5666

April 25, 1998

Mr. Jim Hummer
Science Applications International Corp.
3280 Port of Benton Boulevard
Richland WA 99353

Dear Mr. Hummer:

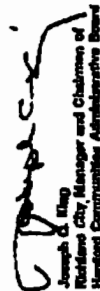
This letter is to ask your help in our review of the draft Programmatic Environmental Impact Statement (PEIS) just released by the Department of Energy on long term storage and disposal of weapons-usable plutonium surplus to the nation's defense needs. Because the PEIS covers a wide range of issues from transportation safety to environmental and socioeconomic impacts, the Hanford Communities will coordinate a review of the document and recommend a response to member jurisdictions.

Hanford is one of six DOE sites listed in the PEIS as candidates for long-term storage of weapons-usable plutonium. Rather than being properly disposed of, the PEIS suggests alternate technologies. Hanford is particularly well situated to support two of these listed - vitrification and incorporation of plutonium into mixed oxide fuel (MOX) for use in nuclear reactors.

We believe our community's response to the PEIS should be carefully developed. It is our responsibility - not that of "outside stakeholders" - to assess the health and safety, transportation, and socioeconomic impacts of weapons-usable plutonium could be embedded as a responsible and viable option for the disposal of weapons-usable plutonium. The public's disposal of weapons-usable plutonium is not well understood and is strongly opposed by the general public, particularly in the Tri-Cities region.

We need to determine whether this community should accept additional plutonium and, if so, under what circumstances. To accomplish this, we have asked a group of 20 individuals to work with us to review the draft PEIS and help us develop a position paper. We would sincerely appreciate your participation in this process. We anticipate that your involvement would include reviewing the draft PEIS, meeting with our consultant to define and shape the issues to be addressed in the white paper and, if you are interested, participating in an open house to convey this information to the community. From them, our staff will be contacting you to ask if you will be willing to help us on this project.

Sincerely,


Joseph C. King
Richland City Manager and Chairman of
Hanford Communities Administrative Board

Independent Communication With Community Members

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for new missions at Hanford. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

1/08.03.01

F-044

HANFORD COMMUNITIES, RICHLAND, WA,
JOSEPH C. KING
PAGE 2 OF 7

James H. Hummer

141 Canton Street • RICHLAND WA 99353 • (509) 821-4176

May 2, 1990

Mr. Craig Williamson
Richland Fire & Emergency Services
1000 George Washington Way
Richland, WA 99352

Dear Mr. Williamson:

Subject: Review of DOE/ESS-0229-D, Storage and Disposition of Weapons-Usable Fissile
Materials Draft Programmatic Environmental Impact Statement

Following is a compilation of comments from the EIS review for transportation issues. To
better the review I solicited support from personal acquaintances from the Westinghouse
Hanford Company (WHC) Transportation and Packaging Function. Their participation, and
my own, is personal and does not represent the views of either WHC or Science
Applications International Corporation (SAIC). Reviews include me and:

Mr. W. F. (Bill) Irvine Manager, Transportation and Packaging
Mr. J. G. (Craig) Field Manager, Packaging Engineering
Mr. J. A. (Lenny) Green Engineer, Transportation Risk Assessment
Mr. J. H. (Jim) Portsmouth Manager, Traffic Management

Overall, we found nothing we would characterize as a showstopper. Safety in
transportation of radioactive materials has an excellent track record. However,
transportation is an issue because it is visible and may involve (by proximity) persons that
would otherwise be miles away from the material. For these, and other reasons, the
Department of Energy has an extensive program of public liaison and communication to
inform and solicit comments from the public on transportation issues. They also administer
training on all aspects of radioactive and other hazardous material transportation and
conduct emergency response training and accident recovery exercises. Other programs
include self assessment of traffic management and radioactive and hazardous material
packaging and transportation operations and third-party evaluation of commercial carriers.
The DOE Office of Transportation, Emergency Management, and Analytical Services
manages these programs (E&M-76). They have not, but should, review this EIS. These
programs help the DOE retain its track record in radioactive and hazardous materials
transportation. The EIS does not, but should, exploit the benefits of these programs.

Westinghouse Hanford Company is an active participant in several of these programs,
particularly training and motor carrier evaluation. As the normal follow-up to WHC's carrier
registration, four inspectors from the Department of Transportation (DOT) conducted a

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Revised Plan & Emergency Services
Page 2
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total review (the week of March 7, 1994, to verify compliance with the federal regulations. They spent the entire week conducting random vehicle inspections, document reviews and personnel interviews in various departments and facilities across the site.

The review included all shipping documents for hazardous materials and wastes leaving the site during the previous year, driver qualification files, vehicle maintenance and inspection records, procedures and policies, hazardous materials employee training records, driver substance abuse testing results, medical files, and liability insurance and hazardous materials registration documentation. The review team found only four discrepancies, which they characterized as minor.

WHC received a "Satisfactory" rating, the highest granted by DOT, and was described in the suit briefing as the best transportation operation in the DOE complex. This may be another advantage that Hanford has concerning this scope of work.

Specific Comments:

The ES assessment seems thorough, given that the numbers would withstand more rigorous scrutiny. There is concern that the packaging certifications (pedigrees) are not clearly explained; i.e., not all packages possess the Nuclear Regulatory Commission endorsement. The other overall concern is that the relative risk bases are not presented clearly.

Alternatives in chapter 2 do not address material transportation adequately or consistently. For example, Section 2.4.1, *Pit Disassembly/Conversion Facility*, states that originator will have ultimate responsibility for safe transfer and shipping, transporters, and receivers are responsible for complying with applicable regulations. This is always the case, whether DOE is involved or not so it really says very little about what DOE does, or will do, to safety transport the materials. In Section 2.4.5.2, *Existing Light Water Reactor Alternative*, transportation addresses five types of radioactive material shipments including low-level waste, fresh MOX fuel, and spent fuel. Section 2.4.5.4, *Evolutionary Light Water Reactor Alternative*, discusses low-level waste, mixed low-level waste, hazardous waste, nonhazardous waste, transuranic waste, and spent fuel yet transportation is summed up as "Inter-site transfers would be made by rail, truck transport, or pipeline as appropriate." All these sections should address all the applicable transportation streams and what special requirements apply such as security or special routing.

There are several references to a DOT Specification 6M in Section 4.4, *Inter-site Transportation of Fissile Materials*, and Appendix G, *Inter-site Transportation*, as a DOT specification 6M Type B packaging. A DOT approved 6M Type B packaging (using 2R inner containers), a 6M, a 6M-2R, and a model 6M. In addition there is a statement that "A typical 6M, Type B packaging approved for use by DOE is covered by Certificate of Compliance Number B869, dated January 5, 1994." This refers NRC certification in

10 00 00

Comment Number 2

The analysis for the storage and disposition alternatives evaluates the potential risks for transporting shippable forms of fissile materials (that is, Pu and HEU) that have been stabilized and packaged for shipment at the originating site. All packaging processes (and certifications) meet DOT and DOE requirements. NRC certification criteria is applied to all Type B packagings, as required by the DOT regulations. Section 4.4.2.2 of the PEIS presents information on packaging criteria established and enforced by Federal agencies. A thorough explanation of risk basis is presented within Sections G.1.1 and G.1.2 for truck/rail and port transit modes, respectively.

10 00 00

Comment Number 3

The transportation issues raised require site-specific knowledge in order to describe the transportation streams and the special requirements which apply to each transportation scenario (security, special routing). Transportation of radioactive material from an existing LWR site and evolutionary LWR site may include several modes of transportation (truck, rail, and barge) depending on the location of the site. Specific transportation streams and special requirements will be addressed if these alternatives are selected for further consideration. Appendix G presents additional information on transportation of radioactive materials and types of packaging specific to the material to be transported.

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Comment Number 4

The PEIS uses the terminology "6M Type B package" to designate both the generic package type identified in the DOT specification and the specific variation of the package type used by DOE. The specific package type used by DOE is denoted as the 6M-2R, consisting of the 6M Type B package using 2R inner containers.

All aspects of the transportation of radioactive materials within the United States are regulated at the Federal level by the DOT. The Federal regulations are implemented by both NRC licenses and DOE for the transportation of

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HANFORD COMMUNITIES, RICHLAND, WA,
JOSEPH C. KING
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Ballistic Fuel Element System
Page 5
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comparison to a DOT specification packaging. The inconsistent terminology and the careless use of "real" Type B packaging" can be very misleading. One is an open DOT specification packaging, the other an orange NRC certified packaging. As described, the ES could lead to unnecessary criticism or doubts about the validity of the risk analysis. The DOT specification packaging is not subject to the test sequence on page 6-7. There is some controversy, mainly among the regulators (DOT and NRC) and DOE, regarding the DOT specification packaging. The ES needs to identify clearly which packaging is which.

Section 4.4.2.2, Packaging, does not adequately describe the safety basis of the DOT-6M packaging, an old grand fathered DOT Specification packaging container, as shipped in the SST, particularly when compared with the safety basis of a state-of-the-art NRC certified SST fuel cask or the BARS Cask. The public is probably not aware of the various systems that authorize Type B packaging: DOT Specification (old), DOT Certificate of Compliance Authority, NRC Certificate of Compliance, and DOE Weapons Program authorizations which include operational considerations. They need to be defined and considered in the risk analysis.

The correct designator for some of these containers would be Type BF versus Type E.

Potential fatalities need to be defined better in Section 4. It is not clear that the potential fatalities reported represent an integrated risk of cancer fatalities from accident and non-accident radiological hazards and non-radiological risks associated with increased radionuclide emissions and highway fatalities. The numbers in this section would be more meaningful if they reported the radiological and non-radiological results separately.

This section also infers that RADTRAN calculates the non-radiological risk, which it does not.

Page 4-772: The first sentence states "materials would be transported by SST or commercial equivalent truck." There is no commercially available equipment like the SST.

Page 4-773: The second sentence states "For relatively low-level radioactive materials, DOT Specification Type A packaging are used." Gaseous light containers are also allowed for low specific activity radioactive material shipments.

Page 4-780: Given more time to digest the information provided, these items may become more clear. For the "Deep Borehole" emplacement alternative, it is not clear why shipments would follow immobilization and come from lag storage. The shipping volumes of 5.5 tons per year seem slow, when the immobilized pellets could be shipped at a rate of 551 tons per year. Why the large difference in shipping volume capacity?

Page 4-781: The fifth paragraph mentions shipping one rail cask at a time for a total of sixty-four shipments per year. Is this in regular train service or "special train"? There is a

radioactive materials. Package designs meeting the Type B package performance criteria are considered by NRC and DOE to provide adequate protection of the public and operating personnel in the event of a transportation accident. The NRC has no regulatory authority regarding DOE transport of radioactive materials, although DOE does use NRC criteria for the certification of Type B packaging, including the 6M-2R.

The approval process followed by DOE regarding Type B packaging and transportation of radioactive materials is established by DOE Orders. Package design, testing, and safety information must be prepared for shipping packages proposed for use within the DOE complex. Review and approval of this information results in DOE's issuance of a Certificate of Compliance for the package and its use. In the case of the 6M Type B package, although the package meets DOT specification, the DOE approval process provides additional requirements prior to the package's use within the DOE complex.

10 00 00 Comment Number 5

A discussion of the safety basis of certified nuclear packaging is beyond the scope of the PEIS. The transport index (TI), which is a regulatory characteristic of a package, was estimated to be the maximum allowed by regulatory requirements and used in the transportation risk analysis. A discussion of transport packaging is presented in Appendix G.

10 02 00 Comment Number 6

The human health risks from the transportation of radioactive materials between sites includes both radiological and nonradiological impacts to the public and workers. The categories of calculated risk include nonradiological accident impacts to the public and workers, nonradiological normal operation impacts to the public (air pollution), radiological accident impacts to the public, and radiological normal operation impacts to the public and workers. The risk to the public from radiological accidents is an order of magnitude less than either nonradiological accidents or radiological exposures during normal operations.

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**HANFORD COMMUNITIES, RICHLAND, WA,
JOSEPH C. KING
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Revised Risk & Emergency Scenario
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big difference in cost associated with the two options.

Page 4-783: Risk numbers are difficult to understand and follow. For example, it seems that the difference in level of risk between processing in the U.S. versus processing in Europe, as depicted in Table 4.4.3-4, would be much greater than shown.

Appendix G: The link associated with the transportation of the materials would be broken understood if it were broken into radiological and non-radiological categories. The radiological risks would also be more meaningful if they reported them for both accident and normal modes. Summing all risks results in numbers that are only useful to compare the alternatives being considered in this EIS. One cannot easily compare them with the other reports, which do not use this method.

Not enough information was given about the RADTRAN input values used. For instance, the following values should be included and referenced: release fractions (RFAC, HERSOL, HERSOL), atmospheric dispersion values for truck and rail, and concerning highway traffic statistics.

NUREG-0170 severity categories were used for all truck shipments. This may not be appropriate for the GLE shipments or for the 55-gallon drum shipments.

Page 8-3: Second paragraph, second sentence states that the GLE packages would be placed on Cargo Restraint Transporters (CRTs) to facilitate loading and securing in the GST. At one time, we were told at Hanford to vacuum our CRT's. Are they still being used on the SST's? Just a question. They worked well.

Page 8-3: The second sentence in the third paragraph mentions transferring the CRT's train an SST to a standard ISO container. Standard ISO containers do not have the floor tie down capability associated with the CRT's and available in the SST. The CRT's have wheels, and a proper tie down pattern would have to be developed for ocean transport in ISO containers.

In addition, I have reviewed the other material you sent me and offer the following comments for your use.

Both Jason Rogers and Rob Davis state their belief that transportation is a fully developed technology and with proper coordination and route selection, risk can be minimized. I agree with this conclusion. The DOE will fully prepare a plan for a long term shipping campaign such as this, conduct emergency response training along the routes, and perform several other extra-regulatory activities to ensure safety in transportation.

Robert M. Jefferson commented that there seemed to be a complete lack of concern for criticality safety. They do not analyze criticality safety in the EIS. However, several

10 00 00 Comment Number 7

If commercial trucks were to be utilized, additional requirements (physical and administrative) would be applied to provide equally effective safety and security measures as provided by SST.

10 00 00 Comment Number 8

The commentor is correct that strong, tight packagings can be used for low-level radioactive materials of less than Type A quantities. The text in Section 4.4.2.2 of the Final PEIS was changed to concur.

10 00 00 Comment Number 9

The Deep Borehole Alternative discusses the disposition of surplus weapons-usable Pu in two forms: (1) direct emplacement of Pu without immobilization and (2) Pu-loaded, ceramic-coated pellets. The amount of Pu to be transported for direct emplacement is estimated to not exceed 5 t (5.5 tons) per year. The amount of Pu-loaded, ceramic-coated pellets to be transported for emplacement is estimated to be 500 t (551 tons) per year. The Pu-loaded, ceramic-coated pellets contain 1-percent Pu. Therefore, the amount of Pu-loaded, ceramic-coated pellets would be 100 times as great as the amount of Pu for direct emplacement, or approximately 500 t (551 tons) per year.

10 00 00 Comment Number 10

Although shipments may be consolidated into "dedicated trains" of more than one car, the risk analysis has considered regular train services for these shipments. Several court decisions have shown there is no safety basis for the use of "special trains" for high-level nuclear materials. DOT, DOE, and NRC have provided no such direction that special trains will be used for radioactive materials.

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JOSEPH C. KING
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Radical Risk & Emergency Services
Page 5
May 2, 1995

Aspects of the Department of Transportation and Nuclear Regulatory regulations deal with
criticality safety as to packaging design requirements, transport limitations, and transport
vehicle loading. A letter comment states that the Transport Index (TI) is based on criticality
considerations for fissile materials. Criticality safety is an important subject that the
governing regulators address.

Sincerely,



J. H. Hummer

cc: J. G. Field
J. H. Green
W. F. Irvine
C. H. Farnell
J. H. Farnsworth

F-044

10 02 00 Comment Number 11

The values given in Table 4.4.3-4 of the PEIS represent the "Total Potential Fatalities" associated with the transportation of Pu oxide, uranium oxide, and MOX, for the Reactor Alternative category. The quantities presented are a result of direct risk calculations which yield results in "numbers of human fatalities." In regard to accumulating the risks associated with a given transportation process, the maximum risk impacts from the transport of Pu oxide, uranium oxide, and MOX fuel under the Reactor Alternatives may be summed directly from Table 4.4.3-4. According to results calculated by the "industry-wide accepted" RADTRAN code, the highest number of total potential fatalities from the transportation of materials from lag storage to fuel fabrication and then to a reactor site is 4.16 for MOX fuel fabrication in the United States. In Europe, the number of potential fatalities for a similar procedural operation would be 4.62. The difference between 4.62 and 4.16 fatalities is essentially negligible. Risk differences between the two "regional" alternatives (that is, the United States vs. Europe) are very small for all stages involved.

10 02 00 Comment Number 12

Appendix G of this PEIS discusses the pertinent methodology and associated parameters utilized in the transportation modeling via the RADTRAN code. The scope of this document does not require scientific detail regarding input parameters to exceed that of a programmatic level.

10 02 00 Comment Number 13

This PEIS evaluated the potential for highway accidents and radioactive releases from the 6M shipments during transport in terms of eight accident severity categories identified in NUREG-0170 and implemented through analysis by the RADTRAN 4.0 computer code. The accident categories ranged from the least severe and most frequent accident (Category I) to the most severe and least frequent accident (Category VIII). NUREG-0170 characterizes package response to these accident categories in terms of release fractions based on the package type, transportation mode, and accident category. DOE considers the accident category information presented in NUREG-0170 to adequately cover the transport mode and package types addressed in the PEIS.

10 00 00 Comment Number 14

The Cargo Restraint Transporters (CRTs) are still being used on the SST.

10 00 00 Comment Number 15

Transportation component design specific to this situation is beyond the scope of this PEIS. If design changes are necessary for International Standards Organization (ISO) transport to occur, proper modifications would be expedited to meet the necessary criteria.

HANFORD COMMUNITIES, RICHLAND, WA,
LARRY HALER, ET AL.
PAGE 1 OF 23

Hanford Communities

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May 8, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P. O. Box 23786
c/o SAIC PEIS
Washington, D.C. 20026-3786

Ref: Draft Programmatic EIS - Weapons Usable Fissile Materials Disposition - February 1996

To Whom it May Concern:

The Hanford Communities, individually through their respective elected bodies and collectively as a group, provide summary comments and recommendations as noted below relative to the referenced EIS. We appreciate the opportunity to provide input into this vital Department of Energy project and accordingly have taken extraordinary measures to ensure a thorough technical and citizen review.

We asked community leaders and technical experts to serve as a volunteer advisory group to the Hanford Communities for this draft PEIS. The 30+ persons participating in this capacity divided into seven focus groups: transportation, health and safety, MOX fuel and Pu conversion, reactor burn options, verification, disposition, socioeconomic issues and national security issues. Their comments complement and go into greater depth than the Hanford Communities' comments and are summarized in Attachment 1. Please review and carefully consider both sets of comments.

While time constraints did not permit public meetings or televised citizen forums during the limited comment period, we intend to hold one or more public meetings or media forums to fully inform the public of this response and gain additional citizen input. We will promptly notify DOE if there are any substantive changes to this transmittal as a result of this additional input.

We strongly support the reactor burn option as the preferred Pu disposition alternative. We believe this option has the best chance of becoming the disposition model internationally because it permits recovery of a significant fraction of the valuable "fuel" value while fully complying with one of the accepted proliferation-resistant disposal alternatives. We believe Hanford offers the best and most compelling cost and schedule advantage with the least environmental, health, safety and proliferation risks for either the reactor burn or the vitrification disposition model. With Hanford's and Washington Public Power Supply System's existing facilities and infrastructure, the planned privatization of Hanford's facilities and the proposed program (Figure 1), large savings in capital and operating funds are possible relative to other sites.

SUMMARY COMMENTS AND RECOMMENDATIONS

- Excess weapons-usable fissile materials must be promptly safeguarded and disposed of in the U.S. and internationally to prevent nuclear weapons proliferation. Time is of the essence since there is a clear and present danger of illicit use of bomb-grade plutonium and high enriched uranium in the world today. Accordingly, we recommend DOE select the preferred disposition alternative and the Pu conversion and disposition sites that best achieve rapid, cost effective, integrated use of already existing DOE facilities; widespread acceptance by the international nuclear weapons community; and minimization of disposition implementation time, new capital requirements and environmental, transportation, safeguards, security, worker and public health and safety, and proliferation risks.

• Independent Communities WMD Common Interests

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for new missions at Hanford. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the disposition of surplus Pu in existing facilities to the extent practical. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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2/08.03.01

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**HANFORD COMMUNITIES, RICHLAND, WA,
LARRY HALER, ET AL.
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01 04 00 Comment Number 3

The PEIS considers six DOE sites for long-term storage of Pu. The ROD will choose an approach and site for long-term storage and a technology(ies) for disposition. The same six DOE sites were evaluated with regard to the disposition options addressed in the PEIS. Additional site-specific NEPA analysis may be required before a disposition decision can be implemented. Hanford is among the six sites considered for disposition.

Liquid metal reactors were not included as alternatives for Pu disposition in the PEIS due to the longer time and greater cost required to complete their construction. The FFTF, on the other hand, is an existing reactor and could be used for Pu burning. However, the limited capacity of the FFTF would limit the rate at which Pu could be dispositioned and require a much longer timeframe for disposition than that which could be achieved with the reactor options addressed in the PEIS.

The Department of Energy is in fact considering the FFTF, pursuant to the ROD for the TSR PEIS. The ROD (December 1995, 60 FR 63878) for the TSR PEIS addressed the FFTF for tritium production as follows:

A private group has recently suggested that it purchase the FFTF from DOE and that DOE then contract with the private group to make tritium at that facility. In the [Tritium Supply and Recycling Final] PEIS, the use of FFTF was considered and dismissed as a long-term tritium supply option because the amount of tritium that it could produce would only meet a percentage of the steady state tritium requirements, and it was not reasonable to rely on operating the facility far beyond the end of its design life. However, DOE will evaluate the presentation made by the private group to determine whether the operation of the FFTF might be able to play any role in meeting future tritium requirements. If any changes are warranted to this ROD following that review, or further NEPA documentation is required, DOE will take appropriate action.

The Secretary of Energy has requested a review by the JASONS Panel (eminent academic scholars and scientists) as part of the evaluation of tritium production with the FFTF. Should the outcome of this evaluation lead to a DOE proposal to restart the FFTF for tritium production, additional environmental analyses would be performed, as appropriate. If the FFTF were to be restarted, a substantial portion of the surplus Pu that would be used

- Hanford should be included in the draft EIS as a potential Pu processing and disposition site -- the PEIS currently only considers Hanford as a "long term storage" site, and specifically, the - Fuels and Materials Examination Facility should be considered as a potential site for MOX fuel fabrication, Pu conversion and/or small scale Pu vitrification, and the - Fast Flux Test Facility reactor should be considered as a viable plutonium "burner" reactor - We oppose any consideration of Hanford as a "long-term Pu storage only" facility. Temporary plutonium storage is acceptable as part of an expeditious, substantive Pu disposition option. - Hanford is unique in that a large, operating, commercial nuclear-electric power station (NPP-2); a plutonium oxide fuel burning (OXF) reactor (FFTF); a commercial low-level waste disposal site; a nearby city; and a large, operating, commercial nuclear-electric power station (NPP-1); a soon-to-be decommissioned and vitrified plutonium infrastructure co-located within DOE's Hanford site boundaries. These co-located or "clustered" facilities (Fig. 1) should be given preferential consideration in this EIS and Record of Decision and in all assessments of environmental impacts, schedules, capital requirements, life-cycle costs, health, safety, safeguards, security, transportation and proliferation risks. - Mitigating transportation issues is a high priority. New or expanded Pu storage site(s) should not be determined until after the plutonium conversion site(s), and preferably, after the preferred plutonium disposition method(s) and the plutonium disposition site(s) are finally selected. - We oppose using Canadian CANDU or any other foreign reactors to dispose of U.S. generated weapons-grade plutonium. This is neither appropriate nor responsible international U.S. policy.	3/01.04.00
	4/08.03.01
	3/01.04.00 cont.
	5/01.00.00
	6/08.03.01
	2/08.03.01 cont.
	3/01.04.00 cont.
In conclusion, we do not believe the Department of Energy can adequately address or minimize the environmental impacts and associated health, safety, safeguards, security, transportation, schedule and cost impacts of the proposed PEIS until it evaluates its Pu conversion and disposition options relative to the synergistic use of existing, collocated, cost effective facilities in the DOE complex. We urge you to formally and thoroughly examine the potential benefits of disposing of plutonium as depicted in the attached simplified schematic (Figure 1). We believe that this approach will literally save DOE billions of dollars and shorten the time to initiate Pu disposition by at least 4 to 8 years. The schematic depicts a collocated plutonium disposition "system" involving compatible, already existing Hanford facilities plus new, already scheduled tank waste vitrification facilities. The plutonium conversion step indicated in the schematic could be at Hanford or elsewhere. We look forward to working with the Department of Energy to refine and improve upon the ideas and concepts provided in this memo. It is essential that DOE's former weapon's complex sites cooperate to find the best, safest, most timely and cost-effective solution to the plutonium disposition problem. Excessive plutonium disposition costs will have a negative impact on the entire ERM budget and hence adversely affect all ERM activities. It is our goal to get the Hanford Cleanup program not be adversely impacted by the plutonium conversion and disposition program. We urge you to incorporate our plutonium disposition comments and recommendations by whatever means are necessary under NEPA into a final or re-issued PEIS and into the Record of Decision. Very truly yours, <i>Larry Haler</i> Larry Haler, Chair Hanford Communities Governing Board Attachments: as stated cc: Mr. T. P. Grumbly, DOE-HQ Mr. J. David Nallan, DOE-HQ	7/11.00.01

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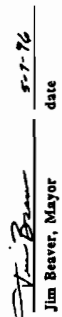
HANFORD COMMUNITIES, RICHLAND, WA,
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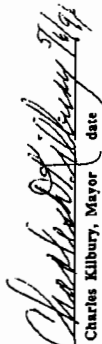
The Hanford Communities Governing Board and Administrative Board Unanimously Approved the Attached Letter Response to the Department of Energy's "Storage and Disposition of Weapons-Usable Fissile Materials" Draft Programmatic Environmental Impact Statement During Its Meeting May 3, 1996

By Signature Below, We the Cities and the County Comprising the Hanford Communities, During Our Regular City Council or County Commissioner Meetings on May 6 or May 7, 1996 Voted Affirmatively to Send the Same Letter in Response to the Department of Energy's Draft Programmatic Environmental Impact Statement


Max Benitz, Jr., Chairman
Board of Benton County Commissioners
date 5-6-96


J. Truckiger, Mayor
City of Benton City
date 5-7-96


Jim Beaver, Mayor
City of Kennewick
date 5-1-96


Charles Kilbury, Mayor
City of Pasco
date


Larry Haler, Mayor
City of Richland
date 5/6/96


Jerry Peltier, Mayor
City of West Richland
date 5-6-96

for MOX fuel could be used to fabricate the FFTF driver fuel, thereby achieving the Spent Fuel Standard for Pu disposition through irradiation in the FFTF. Further description of the FFTF has been added to Appendix N of the PEIS.

The FMEF is considered for use as a long-term storage facility for Pu, and the impacts are included in Section 4.2.1 of the PEIS. For the production of MOX fuel a generic facility was considered for all six DOE sites. At Hanford this MOX fuel fabrication facility would be located in the 200-Area adjacent to 200 East. The utilization of the FMEF would be a variant for MOX fuel fabrication at Hanford, which is bounded by the environmental analysis for the MOX fuel fabrication facility located in the 200-Area. Table 2.4-1 of the PEIS provides a brief description of variants to disposition alternatives analyzed which includes "Modification/completion of existing facilities for MOX fabrication." The storage options for Hanford also include the construction of a new facility. Utilization of the FMEF for the Upgrade Alternative would not preclude its use to also support Pu disposition activities for either Reactor or Immobilization Alternatives.

08 03 01 Comment Number 4

The Department of Energy acknowledges the commentor's opposition to continuing or long-term storage. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 00 00 Comment Number 5

Comment noted.

08 03 01 Comment Number 6

The Department of Energy acknowledges the commentor's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy

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considerations, and public input. This will include an appropriate level of analysis by Canada before any decision on burning Pu in a CANDU reactor is implemented.

11 00 01 Comment Number 7

Comment noted. DOE's Fissile Materials Disposition Program is an integrated effort that will require the participation of a number of DOE sites that have weapons material experience. DOE acknowledges the commentor's concern about the potential effect that selection of Hanford for new missions could have on the Hanford cleanup program. It is DOE's intent that the implementation of Fissile Materials Disposition Program decisions will have little or no impact to ongoing clean up programs. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input. The decision process will also give consideration to existing agreements between DOE, the State of Washington, and the EPA.

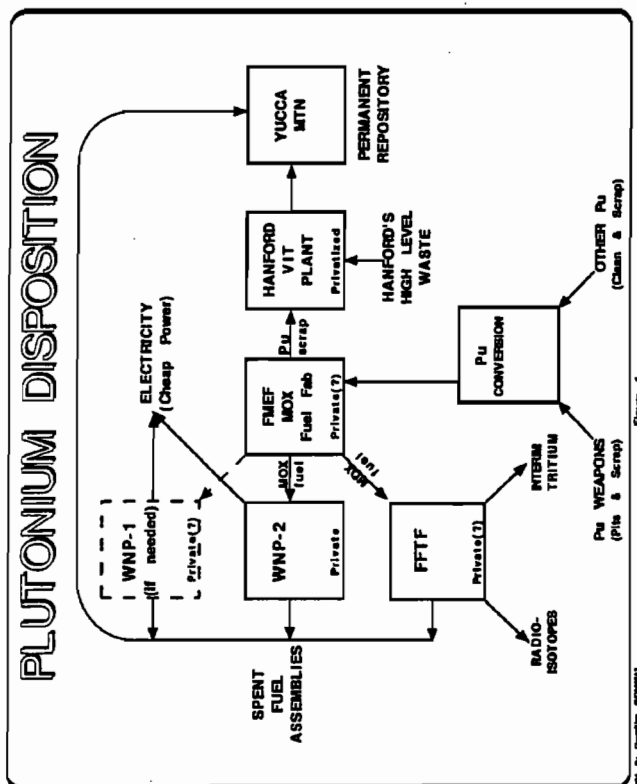


Figure 1

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**Attachment #1: Detailed Comments from the Hanford Communities
"Citizens Advisory Committee" on the Plutonium Disposition PEIS**

The Hanford Communities Advisory Committee¹ represents more than 500 years of experience dealing with billion dollar projects, community interests, and government programs similar to that outlined in this draft programmatic EIS.

Excess weapons-usable plutonium in any form other than a safeguarded "spent fuel standard" represents a clear and present danger to the world's society. The risks of devastating consequences are magnified by the time to reach consensus in today's complex national and international political environment. The "do nothing" option in this PEIS is not acceptable. Time is of the essence. Prompt, decisive United States leadership to demonstrate a cost-effective, near-term path forward that high proliferation-risk countries of the world will adopt, is critical.

In view of the short time permitted for review of the massive amount of detail (~2600 pages) each of seven subcommittees of the Advisory Committee was asked to primarily look for critical or serious issues, gaps, incorrect facts, conclusions or assumptions that could substantially distort the public's view. Also each subcommittee was asked to avoid trying to redo or reinvent the massive amount of valuable detail in the PEIS.

A. Health and Safety

This subcommittee was asked to address the feasibility and appropriateness of the statement in the PEIS relating to public and occupational health and safety within a fifty mile radius of the site. This was to be done in consideration of two possible uses for plutonium disposition at the site: 1) reactor burning of plutonium and 2) vitrifying plutonium together with high level waste into borosilicate glass logs.

A1. The first concern, if there is a concern, is that the summary report does not address the methodology used, so it is really not totally possible to evaluate how good the numbers or the doses are.

A2. The PEIS also stated that occupational and environmental radiological and chemical (doses) will be within accepted limits. The judgment of this committee is that there are sufficient unknowns, certainly with respect to the chemical hazards, that such a statement is difficult to substantiate. The other hazards, such as ergonomic, occupational in general, were not addressed. The only issue was latent cancer due to radiation within the two plutonium disposition alternatives.

¹ The list of invited Advisory Committee participants is attached. Some of those invited could not participate because of potential conflicts of interest, some participated on an ex-officio basis only, and some had only minor involvement because of illness or travel schedules. The majority of those invited did participate, providing valuable contributions to this Attachment.

8/08.03.01

9/09.09.08

10/09.09.08

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08 03 01

Comment Number 8

The Department of Energy acknowledges the commentor's opposition to continuing or long-term storage. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 09 08

Comment Number 9

The PEIS Summary presents the Proposed Actions and their potential environmental impacts. It does not include a description of the assessment methodologies used for each environmental resource including human health risk assessment. A description of assessment methodologies used for each environmental resource is presented in the Methodology Report, Chapter 4, and the Appendices of the PEIS.

09 09 08

Comment Number 10

Detailed information regarding hazardous chemicals used in the Proposed Action, and their health impacts to workers and the general public, is described in Chapter 4 and Appendix M of the PEIS. This information includes the chemical emissions from the proposed facilities, the toxicity of the emitted chemicals, the predicted chemical concentrations in the environment, and health impacts to workers and the general public. The methodology used for the chemical hazards assessment is also documented in the Methodology Report, Chapter 4, and Appendix M of this PEIS.

A3. Was an ALARA evaluation done? If so, it is not documented or referred to in the PEIS. A4. The PEIS summary was written before NCRP report 121 was issued. The PEIS summary does not appear to be consistent with the philosophy or guidelines in NCRP 121, which deals with collective dose. This philosophy and guideline, if applied to this analysis, would basically ignore the radiological risks to the general public as the risk of a fatal cancer is less than one. A5. Based on the guidance provided to the Hanford Communities' subcommittees, we must accept the methodology that is the determinate of risk. On this basis, the radiological risk for cancer latency would appear to be insignificant. A6. Perhaps more basic is the lack of specificity of what type of hazards, aside from radiation, might be involved, i.e., what types of chemicals, what would be shipping alternatives and what to do about long term release likelihood. Our conclusions are: a) to accept the calculations and risk estimates as done by DOE that the risk of latency for long term cancer causation is basically very small to insignificant, and b) to question the chemical hazards and transportation hazards that have not been fully addressed. (editor comment: note transportation issues in Section E below)	11/09.09.08 12/09.09.08	Comment Number 11 It has been stated in this PEIS that it is DOE's position to keep the health risk for workers and public ALARA although there is no elaboration of how to implement the ALARA practice for each proposed alternative. The ALARA analysis and practice are the refinement of the design and operation. It needs more detailed information about the facility design, which is not available at this stage.
B. Pu Conversion and Mixed Oxide Fuel Fabrication B1. The Fuels, Materials, and Examination Facility (FMEF) was improperly considered in the PEIS as only a potential storage area. This facility, originally built to manufacture and handle MOX fuel elements, should be considered as the best potential site for MOX fabrication in the United States. B2. The FMEF capabilities and attributes are understated. The FMEF is a versatile and expandable facility. It was designed to be expanded to the east. All site infrastructure requirements, e.g., electrical capacity, cooling, sewer, security system, etc., are readily available to support an expansion. B3. The FMEF in its current configuration can house a limited Pu metal-to-oxide conversion and a mixed-oxide (MOX) fuel fabrication line supporting Fast Flux Test Facility (FFTF) plutonium burn. In addition, one of the several large post-irradiation exam (PIE) hot cells can be used to demonstrate vitrification of off-specification or scrap local plutonium. All three of these programs could be implemented within five years, given the advanced completion state of the facilities and knowledge of the processes. B4. If an aggressive reactor burn program develops utilizing local light water reactors (LWR), FMEF's expansion capabilities would permit the addition of an adjacent fuel fabrication facility capable of fueling both FFTF and local LWRs. This would provide space within the existing FMEF building to retrofit large-scale Pu metal-to-oxide conversion, plutonium scrap cleanup and limited plutonium	13/09.10.08 12/09.09.08 cont. 13/09.10.08 cont. 3/01.04.00 cont.	Comment Number 12 As stated in this comment, the PEIS was written before National Commission of Radiological Protection (NCRP) Report 121 was issued. To meet NEPA requirements, the latent cancer fatalities to the population are reported in this PEIS as they are calculated, even if the results are very small or insignificant. To help understand the radiation health risk and latent cancer fatalities, an explanation of these terms is included in Appendix M of the PEIS. Comment Number 13 The detailed information about hazardous chemicals from the Proposed Alternatives and their health impacts to workers and the general public is described in Chapter 4 and Appendix M of this PEIS. The information contained in this PEIS includes the chemical emissions from the proposed facilities, toxicity of the emitted chemicals, the predicted chemical concentrations in the environment, and their health impacts to workers and the general public. The methodology used for the chemical hazards assessment is documented in the Methodology Report, Chapter 4, and Appendix M of this PEIS. The transportation of hazardous and non-hazardous material is presented in Appendix G.

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vitification. Expertise and equipment from other countries to expedite early MOX fuel fabrication could be used as appropriate.	3/01.04.00 cont.
B5. While the PEIS bounds environmental impacts in an extreme fashion, it doesn't represent a realistic fiscal approach nor a rapid deployment approach to a very real plutonium proliferation problem. The PEIS's lack of recognition and understatement relative to a group of facilities that exist and are environmentally adequate and appropriate to economically begin this project make the value of the document questionable. The PEIS must bound, but it must also incorporate realistic solutions.	14/01.04.00
B6. The current federal government fiscal policy and environment do not correspond to the extreme facility requirements and description in the PEIS. There is a need to take every advantage of facilities and capabilities currently available and pursue a modular approach to the solution. The need for plutonium disposition is too great to have the program collapse upon itself due to inflated need assumptions and criteria.	15/01.00.00
B7. While land is in plentiful supply at Hanford, the land requirements indicated for facilities necessary to perform disposition activities such as pit disassembly, plutonium conversion, immobilization, and MOX fuel fabrication seem to be significantly overstated. These land use requirements do not seem to be consistent with facilities that have previously accommodated these type of operations. In addition, potential utilization of existing facilities at DOE Sites for these disposition activities would result in considerably less land use than indicated.	16/01.04.00
B8. It appears that insufficient consideration has been provided in the PEIS to facilities that are already constructed and operational or are partially complete and could be made operational at minimum cost. Facilities such as these, at which most of the costs of siting, design, construction, public safety evaluations, security systems and processes, and public acceptance have already been provided, should be given top priority in these considerations.	2/08.03.01 cont.
B9. All waste streams that may be generated as a result of the implementation of the selected disposition alternative need to be thoroughly evaluated. Acceptable plans and processes to properly dispose of these waste streams must be solidly in place prior to putting the alternative into production. Further, synergism, not conflict, with vital on-going cleanup missions is possible.	17/09.11.08
C. Reactor Burn Disposition Option	
C1. We strongly recommend the most effective, permanent and fail-proof means of disposing of surplus weapon's materials, i.e., convert it to reactor fuel and irradiate it to the spent fuel standard. The excess plutonium represents hundreds of millions of dollars, if used in the form of reactor fuel that should be used to provide needed electrical power, cancer killing radioisotopes and tritium for	1/08.03.01 cont.
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01 04 00 Comment Number 14

Comment noted.

01 00 00 Comment Number 15

Existing facilities have been considered in this PEIS to the extent practicable. For example, in the storage action, one of the three alternatives is Upgrade at Multiple Sites, which uses existing facilities. In the disposition action, existing reactors in the United States and Canada are included as alternatives as well as an existing vitrification facility at DOE's SRS.

01 04 00 Comment Number 16

The Department of Energy believes that the land use requirements identified for pit disassembly and conversion, immobilization, and MOX fuel fabrication are correct. If these requirements exceed what is eventually needed, the smaller requirement will be bounded by the environmental analysis.

09 11 08 Comment Number 17

The conceptual designs for the Consolidation and Collocation storage alternatives and the disposition alternatives have, as part of their design, waste management facilities that would treat and package all waste generated into forms that would enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State statutes, and DOE Orders. For the Upgrade Storage Alternatives, site-specific waste management facilities were determined to be adequate. As the designs mature, process waste assessments which include individual waste stream characterization will be completed. No waste stream will be generated that cannot be treated and packaged into a form that enables long-term storage and/or disposal.

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Comment Number 18

01 03 00

Comment noted.

18/01.03.00

national defense. We believe the United States should move rapidly to lead the world in the safe and efficient disposal of excess weapons-usable fissile materials using the disposition method to which most other nuclear power countries are committed.

C2. No consideration was given to liquid metal reactor concepts for Pu disposition, although LWRs, especially FFTF, are specifically designed for flexibility in fuel use, and are particularly well suited to operate with mixed oxide (MOX). FFTF, the newest reactor in the DOE complex, has more than a 20-year remaining life and can "burn" significant quantities of plutonium, especially if highly enriched MOX fuel is used. FFTF should be included as a disposition option in the final PEIS.

C3. Hanford represents a unique and effective solution to the Pu disposition problem:

- Virtually the entire disposition cycle can be accomplished on a single site (Hanford), which has much of the security, public health and safety considerations and facilities already in place to commence the task.
- There is unprecedented local public acceptance of a Hanford Pu disposition mission. Unanimous endorsement was obtained from every elected city council member (Richland, Kennewick, Pasco, West Richland and Benton City) and county commissioner (Benton County) and from the Hanford Communities governing and administrative boards. Please note the endorsements attached to the cover letter.
- The FMEF is a facility effectively ready to accept plutonium and uranium oxides and convert them to MOX fuel for FFTF irradiation.
- The FMEF can readily accommodate the introduction of LWR MOX fuel fabrication equipment. (Unused state-of-the-art MOX fuel fabrication equipment is available from Siemens. Siemens also represents a local source of expertise to support the installation and operation of this equipment. Sandvik Special Metals represents a local source of high quality, reactor grade tubing for LWR fuel fabrication).
- WNP-2 is a modern BWR that can annually consume approximately 0.5 tons of weapons grade plutonium as MOX fuel.
- FFTF can use about 3/4 tons of plutonium per year as fuel to produce medical radioisotopes and/or tritium.
- WNP-1, if completed, could consume close to 1 ton of plutonium per year in the form of MOX fuel.

3/01.04.00
cont.

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- The weapons grade plutonium on-site plus any received from off-site should not need to be transported more than a few miles and never off the Hanford reservation until it has been converted to a spent fuel standard. C4. Using weapons usable fissile material to generate electricity in a once-through cycle in existing light water reactors (LWRs) is the most technologically assured option. The PEIS should clearly define the burnup range for the spent fuel standard. Without this range, costs and benefits cannot be reasonably calculated. C5. Prior to selecting LWRs as one of the preferred alternatives, specifics like ownership and management of the facility (i.e., control of operations), re-licensing, costs, taxes, waste management, new fuel, security, spent fuel and spent fuel disposal changes, if any, should be considered and described. C6. The CANDU Reactor alternative is inconsistent with the criteria on 1) demonstrated technical viability, 2) fostering progress and cooperation with other nuclear weapons states and 3) environmental safety and health compliance. Placing U.S. weapons usable plutonium in the hands of a foreign government for disposition does not make sense for long term law, security and environmental health and safety enforcement. (Recently, protests to this option have developed within Canada). C7. Selection of the partially completed reactor alternative can provide major cost savings to the United States taxpayer and benefits to future generations. All of the screening criteria are met with this reactor alternative. A number of partially completed reactor sites are available for consideration. The PEIS should reference WNP-1 in its PEIS or remove all references to the TVA plant. The PEIS selects TVA's Bellefonte Nuclear Plant as the benchmark for reasons that even more strongly would justify selecting WNP-1. WNP-1 is on DOE land, less than five miles from the FMEF (the FMEF and WNP-1 share a common sewage treatment facility). DOE's Bonneville Power Administration is formally attached to the site, both financially and through electrical distribution. Prior to selecting a benchmark, a number of factors need to be considered, e.g., continuous preservation program, ASME pedigree maintenance, design documentation and security integrity, NRC inspections results, etc. C8. Facility and operations "clustering" should be included in the PEIS. One of the current and highly successful business strategies is the concept of "clustering" semi-independent or synergistic businesses. Clustered businesses share overhead (infrastructure) costs and leverage a wide variety of inputs and outputs and resources. Five screening criteria can be directly and substantively influenced using the "cluster" approach: cost-effectiveness, timeliness, ES&H compliance, public and institutional acceptance, and additional benefits. Clusters are more economical because they reduce transportation, provide internal incentives for product and schedule, lower security risk, add regional employment stability and	19/08.03.01	
	20/01.02.00	
	19/08.03.01 cont.	
	21/06.05.08	
	22/01.03.00	
	23/06.03.08	
	24/01.04.00	
	25/01.04.00	
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08 03 01	Comment Number 19	The Department of Energy acknowledges the commentor's support for the Existing LWR Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.
01 02 00	Comment Number 20	The technical, cost, and schedule analyses of the various alternatives are presented in a separate document to support DOE's ROD. This document was made available to the public for review beginning in late July 1996.
06 05 08	Comment Number 21	The following points are given in response to your comments: a) The CANDU reactor has never been tested with industrial quantities of MOX fuel. However, the Canadians are performing limited testing of MOX fuel in test reactors. It is believed that CANDU reactors can utilize MOX fuel. The Technical Summary Report provides more information on CANDU technology. b) Contrary to the comment, one of the strengths of the CANDU Reactor Alternative is the prospect of having a joint U.S.-Russian Pu disposition campaign in Canada. c) In terms of ES&H compliance, the implementation of the CANDU Reactor Alternative would be performed in full compliance with both the U.S. and Canadian ES&H regulations, as applicable.
01 03 00	Comment Number 22	Should the CANDU Reactor Alternative be selected for disposition of Pu, agreement with the Canadian Government would be reached on the Pu disposition process, including safeguards and security requirements which call for facility inspection by the IAEA, as appropriate, and environmental analyses conducted with public involvement.

share environmental impacts. Synergism with on-going cleanup commitments would be expected.	25/01.04.00 cont.
C9. Security or resistance to theft and diversion by unauthorized parties can be enhanced by "clustering". The PEIS should acknowledge that security (and public health and safety) is significantly enhanced when the transportation of weapons grade materials outside a federally secured site is reduced or eliminated.	26/13.00.00
D. Combined Fuel and Reactor Subcommittees' Comments The comments from these two combined subcommittees deal with recommendations or changes to the screening criteria. The screening criteria represent the foundational base of the PEIS. Recommended changes to the criteria are shown in bolded italics.	
D1. Screening Criteria for Long-Term Storage Option	
a. Environmental, Safety and Health (ES&H) Compliance: High standards of public and worker health and safety and environmental protection must be met <i>nationally and internationally</i> and significant additional ES&H burdens should not be created. <i>Combinations of facilities and use of existing nuclear sites should be used to avoid "new" environmental burdens.</i>	27/01.05.00
b. Cost-Effectiveness: Long-term storage should be accomplished in a cost-effective manner and should be compatible with reasonable disposition alternatives. <i>Potential for capital cost escalation shall be considered in the decision process. Proven technologies will minimize capital costs and are the least likely to escalate due to unknowns.</i>	28/01.05.00
c. Foster Progress and Cooperation with Russia and Other Countries: A facility (all facilities) must accommodate international inspection for surplus materials in unclassified shapes and must establish appropriate standards for storage and protection of international nuclear material inventories. <i>Technologies used shall consider the applicability to other countries, for example, the selected alternative should be consistent with Russia's national priorities and be within their means to afford and safely implement.</i>	29/01.05.00
d. Public and Institutional Acceptance: An alternative should be able to muster a broad and sustainable consensus on the manner in which long term storage is accomplished. <i>The long term storage alternative should be integrated with the existing site mission and provide assurance that proven means of public involvement exist for mission oversight from start to finish.</i>	30/01.05.00
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06 03 08 Comment Number 23

Comment noted.

01 04 00 Comment Number 24

The PEIS uses the Bellefonte Nuclear Plant as the basis for analysis of a partially completed reactor. If the Partially Completed Reactor Alternative is stated in the ROD, a competitive process would be used to select an actual reactor facility for implementation. This process would consider economics, existing infrastructure, and related factors.

01 04 00 Comment Number 25

The Department of Energy, as part of the ROD, will consider the benefits of grouping various facilities at DOE sites in order to take advantage of existing infrastructure, technical expertise, and related factors.

13 00 00 Comment Number 26

Comment noted. DOE will consider this information in its analyses and decisionmaking process.

01 05 00 Comment Number 27

The commentor's recommended inclusion is already an existing part of the criteria. A detailed description of all the screening criteria appears in Section 2.2 of the *Summary Report of the Screening Process*, March 1995.

01 05 00 Comment Number 28

The commentor's concern has been taken into consideration in the cost, schedule, and technical impact analysis which is presented in a separate document made available to the public for review beginning in late July 1996.

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D2. Screening Criteria for Disposition Options		
a. Resistance to Theft and Diversion by Unauthorized Parties: Each step in the disposition process must be capable of providing for comprehensive protection and control of weapons-usable fissile materials. <i>The comprehensive protection and control approach must demonstrate integration with the previous and following step.</i>		31/01.05.00
b. Technical Viability: There should be a high degree of confidence that the alternative will be technically successful, with reliance on proven technology that can be economically supported and is available to former Soviet Union countries and other nuclear weapons states.		
c. Environmental, Safety and Health (ES&H) Compliance: High standards of public and worker health and safety and environmental protection must be met and significant additional ES&H burdens should not be created. <i>The selected disposition alternative should take advantage of existing ES&H burdens to minimize total impact. New PEIS ES&H burdens should be integrated with existing federal and commercial ES&H burdens to avoid doubling the burden in the same exclusion zones.</i>		32/01.05.00
e. Cost-Effectiveness: Disposition should be accomplished in a cost-effective manner and be compatible with reasonable long term storage alternatives. <i>Disposition should capitalize on existing federal facilities and proven technologies to enhance cost effectiveness. Cost effectiveness shall consider internationally compatible technologies to foster international progress and cooperation. Selected alternatives should include the total life-cycle cost concept and be cost projected through the period estimated to complete the mission.</i>		33/01.05.00
f. Timeliness: There is an urgent need to begin Pu disposition and to minimize the time period that surplus fissile materials remain in weapons-usable form. <i>Each step in the process should be fully integrated into an overall project time table that includes steady state operation and D&D. Incentives and market competition shall be used to assure timeliness.</i>		34/01.05.00
g. Public and Institutional Acceptance: An alternative should be able to muster a broad and sustainable consensus on the manner in which disposition is accomplished. <i>The nationally and internationally accepted disposition alternative must be integrated with local/regional acceptance of the selected site(s). In addition to local/regional acceptance, decisions about plutonium disposition need to be based on objective analyses of cost, time, and risk. The selected site should have a functional public oversight board with broad regional representation and strong local municipality support.</i>		31/01.05.00 cont.
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01 05 00 Comment Number 29

To the extent practicable, the commentor's recommendation was incorporated into the Nonproliferation Policy impact analysis presented in a separate document which was made available to the public for review in October 1996.

01 05 00 Comment Number 30

The Department of Energy has an ongoing effort in program integration in which public involvement is an important element.

01 05 00 Comment Number 31

Comment noted.

01 05 00 Comment Number 32

Comment noted.

01 05 00 Comment Number 33

Comment noted.

01 05 00 Comment Number 34

The commentor's concern has been taken into consideration in the cost, schedule, and technical impact analysis which is presented in a separate document made available to the public for review beginning in late July 1996.

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b. Additional Benefits: The ability to leverage government investments for disposition of surplus materials to contribute to other national or international initiatives should be considered. <i>The highest consideration should be given to prior unused or partially used government investments (facilities and/or infrastructure), especially those that are clustered, that could be leveraged to effect rapid, safe and cost effective plutonium disposition and to contribute to other national or international initiatives.</i>	32/01.05.00 cont.
i. Waste Package and Byproduct Program Integration: <i>The selected alternative shall consider all waste forms and their effective disposition, including provisions for D&D.</i>	35/01.05.00
j. Local Public and Private Business Sector Involvement: <i>The selected alternative shall use, to the maximum extent practicable, local private and public businesses, best commercial practices and incentives to best accomplish the mission.</i>	32/01.05.00 cont.
E. Socioeconomic Issues Since a number of the recommendations from the Advisory Committee support using already existing Hanford and/or local facilities, there were few new socioeconomic issues to consider. For example the Advisory Committee virtually discarded the "green field" strategy used in the PEIS, e.g., the construction of new facilities on geographically dispersed sites. Not disposing of weapons grade plutonium is believed to have far greater socioeconomic consequences than using existing Hanford assets and capabilities to responsibly and quickly demonstrate a workable international plutonium disposition model.	36/09.08.01
F. Transportation Issues The group looking at transportation issues did not find anything in the PEIS that would be characterized as a "showstopper". Instead, a number of items of lesser consequences were discussed and are reported here for the purpose of addressing these in the final EIS. On the positive side, transportation of radioactive materials in this country has an excellent track record with few major accidents and no fatalities from release of material in accidents. This subcommittee concluded that transportation is a fully developed technology and with proper coordination and route selection, risk can be minimized. Hanford Site capabilities, as well as those of the surrounding communities, coupled with the new Hazardous Materials Management and Emergency Response (HAMMER) training facility, provide a unique combination of resources in support of on-site/off-site emergency preparedness.	37/10.00.00
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01 05 00 Comment Number 35

"Waste minimization" and "known and manageable waste forms" were included in the screening criteria, as described in the *Summary Report of the Screening Process*.

09 08 01 Comment Number 36

The Department of Energy acknowledges the commentor's support for the utilization of existing facilities at Hanford for the storage and disposition of weapons-usable fissile materials. Decisions on storage and disposition will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

10 00 00 Comment Number 37

The PEIS transportation analysis includes the movement of material required for disposition at more than one location. If the common activity facilities (for example, pit disassembly facility) are located at the same site as the disposition activity facilities (for example, ceramic immobilization facility), then there would be a reduction in the transportation risk. The current analysis is bounding for activities at multiple sites.

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evidence that "clustering" of some or all of the various steps in locations, such as Hanford, with short relative inter-facility distances will result in lower fatalities due to a non-radiological caused accident. It is also clear, consistent with other commenters, that the PEIS is deficient in not calculating the transportation burden reduction by integrating the various transportation steps for different disposition and storage alternatives.	37/10.00.00 cont.
F1. The packaging certifications (pedigrees) are not clearly explained, i.e., not all packages possess the NRC endorsement.	38/10.00.00
F2. Relative transportation risk bases are not clearly presented.	39/10.00.00
F3. Alternatives in Chapter 2 do not address material transportation adequately or consistently. For example, in Section 2.4.1, Pit Disassembly/Conversion Facility; Section 2.4.5.2, Existing Light Water Reactor Alternative; and Section 2.4.5.4, Evolutionary Light Water Reactor Alternative, all should address all the applicable transportation streams and what special requirements apply such as security or special routing.	40/10.00.00
F4. There are several examples of confusing references to DOT specification packaging versus NRC certified packaging. Some of these occur in Section 4.4, Intersite Transportation of Fissile Materials, and in Appendix G, Intersite Transportation "6M, 6M Type B, 6M-2R, Model 6M". The EIS needs to identify clearly which packaging is which.	41/10.00.00
F5. Section 4.4.2.2, Packaging, does not adequately describe the safety basis of the DOT-6M packaging (an old grandfathered DOT Specification packaging container as shipped in the SST), particularly when compared with the safety basis of a state-of-the-art NRC certified spent fuel cask or the BUSS Cask. Many are not aware of the various systems that authorize Type B packages: DOT Specification (old), DOT Certificate of Competent Authority, NRC Certificate of Compliance, and DOE Weapons Program authorizations. They need to be defined and considered in the risk analysis.	42/10.00.00
F6. "Potential fatalities" should be clearly defined in Section 4.	43/10.00.00
F7. Section 4 infers that RADTRAN calculates the non-radiological risk, which it does not.	44/10.02.00
F8. Page 4-772: The first sentence states "materials would be transported by SST or commercial equivalent truck." There is no commercially available equipment like the SST.	45/10.02.00
F9. Page 4-773: The second sentence states "For relatively low-level radioactive materials, DOT Specification Type A packaging are used". It should be pointed	46/10.00.00
	47/10.00.00
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10 00 00 Comment Number 38

The transportation of materials for storage and disposition have been separated to allow for separate decisions. The summation of the results is conservative since it does not consider the integration of the two actions. All steps (for example, pit disassembly or MOX fuel fabrication) have been included in the transportation analysis for disposition.

10 00 00 Comment Number 39

The analysis for the storage and disposition alternatives evaluates the potential risks for transporting shippable forms of fissile materials (that is, Pu and HEU) that have been stabilized and packaged for shipment at the originating site. All packaging processes (and certifications) meet DOT and DOE requirements. NRC certification criteria is applied to all Type B packagings, as required by the DOT regulations. Section 4.4.2.2 of the PEIS presents information on packaging criteria established and enforced by Federal agencies. A thorough explanation of risk basis is presented within Sections G.1.1 and G.1.2 for truck/rail and port transit modes, respectively.

10 00 00 Comment Number 40

The human health risks of material transportations associated with the proposed Pu storage and disposition alternatives are evaluated and presented in Section 4.4 of this PEIS. The more detailed description of the methodology and supporting data for the analysis is presented in Appendix G. Transportation of radioactive materials between sites includes health risks for both normal operations and accident conditions to the public and workers.

10 00 00 Comment Number 41

The transportation issues raised require site-specific knowledge in order to describe the transportation streams and the special requirements which apply to each transportation scenario (security, special routing). Transportation of radioactive material from an existing LWR site and evolutionary LWR site may include several modes of transportation (truck, rail, barge, etc.) depending on the location of the site. Specific transportation streams and

out that strong tight containers are also allowed for low specific activity radioactive material shipments.	47/10.00.00 cont.
F10. Page 4-780: For the Deep Borehole emplacement alternative, it is not clear why shipments would follow immobilization and come from lag storage. Also, why the large difference in shipping volume capacity? For example, the shipping volumes of 5.5 tons per year seem low, when the immobilized pellets could be shipped at a rate of 551 tons per year.	48/10.00.00
F11. Page 4-781: The fifth paragraph mentions shipping one rail cask at a time for a total of sixty-four shipments per year. No mention is made of whether these shipments are by special train or regular train service. There is a big difference in cost associated with the two options.	49/10.00.00
F12. Page 4-783: Risk numbers are difficult to understand and follow. It seems that the difference in level of risk between processing in the United States versus processing in Europe, as depicted in Table 4.4.3.3-4 would be much greater than shown.	50/10.02.00
F13. Appendix G: The risk associated with the transportation of the materials would be better understood if it were broken into radiological and non-radiological categories. The radiological risks would also be more meaningful if they were reported for both accident and normal modes. One cannot easily compare the "stunned all risks" numbers in this PEIS with other reports that do not use this method.	51/10.02.00
F14. Not enough information was given about the RADTRAN input values used. For instance, the following values should be included and referenced: release fractions (RFAC, HERSOL, RBSP), atmospheric dispersion values (for truck, rail, and oncoming highway traffic statistics).	52/10.02.00
F15. NUREG-0170 severity categories were used for all truck shipments. This may not be appropriate for the 6M shipments or for the 55-gallon drum shipments.	53/10.02.00
F16. Page G-3: Second paragraph, second sentence states that the 6M packages would be placed on Cargo Restraint Transporters (CRT) to facilitate loading and securing in the SST. What's the status on the CRT's? Several sites were told to return them. Are CRT's still being used on the SST's?	54/10.00.00
F17. Page G-3: The second sentence in the third paragraph mentions transferring the CRT's from an SST to a standard ISO container. Standard ISO containers do not have the floor tie down capability associated with the CRT's and available in the SST. A proper tie down pattern would have to be developed for ocean transport in ISO containers.	55/10.00.00
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special requirements will be addressed if these alternatives are selected for further consideration. Appendix G presents additional information on transportation of radioactive materials and types of packaging specific to the material to be transported.

10 00 00 Comment Number 42

The PEIS uses the terminology "6M Type B package" to designate both the generic package type identified in the DOT specification and the specific variation of the package type used by DOE. The specific package type used by DOE is denoted as the 6M-2R, consisting of the 6M Type B package using 2R inner containers.

All aspects of the transportation of radioactive materials within the United States are regulated at the Federal level by the DOT. The Federal regulations are implemented by both NRC licenses and DOE for the transportation of radioactive materials. Package designs meeting the Type B package performance criteria are considered by NRC and DOE to provide adequate protection of the public and operating personnel in the event of a transportation accident. The NRC has no regulatory authority regarding DOE transport of radioactive materials, although DOE does use NRC criteria for the certification of Type B packaging, including the 6M-2R.

The approval process followed by DOE regarding Type B packaging and transportation of radioactive materials is established by DOE Orders. Package design, testing, and safety information must be prepared for shipping packages proposed for use within the DOE complex. Review and approval of this information results in DOE's issuance of a Certificate of Compliance for the package and its use. In the case of the 6M Type B package, although the package meets DOT specification, the DOE approval process provides additional requirements prior to the package's use within the DOE complex.

10 00 00 Comment Number 43

A discussion of the safety basis of certified nuclear packaging is beyond the scope of the PEIS. The TI, which is a regulatory characteristic of a package, was estimated to be the maximum allowed by regulatory requirements and

F18. The PEIS transportation burden does not include the risks for intermediate level and low level waste associated with each step of the process.	56/10.02.00
F19. No analysis of possible criticality incidents under accident conditions is provided.	57/10.02.00
F20. The PEIS does not adequately analyze both the regulations (NRC, DOT and DOE) and the history of interpretation of those regulations, which form the basis for defining a transportation system for plutonium.	58/10.00.00
F21. There are no references to the safeguards requirements for shipping Pu, even though these are extensive. It appears on page 4-771 that it is intended to utilize the SST for all shipments of Pu. Yet, on page 4-780, in the penultimate paragraph, it indicates that ceramic pellets containing 1% Pu might be shipped by commercial carrier. This is confusing.	59/10.00.00
F22. Some of the analysis appears based on RADTRAN without any conscious evaluation of the results. For example, Page G-3 states that "transits to ports are typically through low population density areas." Ports are almost universally located in cities where the population density is the highest.	60/10.02.00
G. Vitrification Disposition Option	
Evidence continues to build that vitrification is a viable alternative or a supplemental alternative to reactor burn as a means of disposing of plutonium. Vitrification supplements reactor burn by serving as a potential disposal means for contaminated plutonium and plutonium scraps otherwise unsuitable for manufacture into MOX fuel assemblies.	61/08.03.01
Incorporating several weight percent plutonium in a vitrified glass appears to be feasible. Criticality concerns about plutonium pooling in a vitrified melt are being dispelled with experimental data. In addition, neutron absorbers could be added to the matrix if deemed necessary.	62/05.01.08
Durability of the glass product is a function of the type of glass limited by the maximum temperature of the melter. The borosilicate glass proposed in the PEIS can be processed at about 1050°C. Higher temperature melts can be achieved with less boron and more silicon, e.g., at about 1300 to 1500°C.	
Small melter vitrification technology developed at Hanford over the past several decades and demonstrated in the 324 Building can be used as the basis for implementing a scaled-up version in a suitable Hanford facility. The planned TWRs high level tank waste vitrification project provides an opportunity for high radiation field "immobilization" techniques to be used for higher throughputs. In summary, all of the vitrification technology necessary to deal with a variety of vitrification alternatives resides at Hanford ready for implementation.	63/05.01.01
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used in the transportation risk analysis. A discussion of transport packaging is presented in Appendix G.

10 02 00 Comment Number 44

Potential fatalities are a conservative estimate of those fatalities that would result from both radiological and nonradiological risks from normal operations and accident conditions for a Proposed Action. A definition has been added to the Glossary (Chapter 7, *Glossary*) of the Final PEIS.

10 02 00 Comment Number 45

RADTRAN calculated only the radiological risk due to materials transportation. Nonradiological risk is calculated as described in Section G.1.1. Section 4.4.1 was clarified to state that RADTRAN only calculated the radiological risk.

10 00 00 Comment Number 46

If commercial trucks were utilized, additional requirements (physical and administrative) would be applied to provide equally effective safety and security measures as provided by SST.

10 00 00 Comment Number 47

The commentor is correct that strong, tight packagings can be used for low-level radioactive materials of less than Type A quantities. The text in Section 4.4.2.2 was changed to concur.

10 00 00 Comment Number 48

The Deep Borehole Alternative discusses the disposition of surplus weapons-usable Pu in two forms: (1) direct emplacement of Pu without immobilization and (2) Pu-loaded, ceramic-coated pellets. The amount of Pu to be transported for direct emplacement is estimated to not exceed 5 t (5.5 tons) per year. The amount of Pu-loaded, ceramic-coated pellets to be transported for emplacement is estimated to be 500 t (551 tons) per year. The Pu-loaded,

G1. Page 2-109: Under facility operations, it should be clarified whether the 25 kg per operating day throughput is for Pu only or for the immobilized waste form. This same comment applies to the ceramic waste form.	64/05.01.08 65/05.02.08
G2. Page 2-110: Under waste management, what are "criteria" pollutants?	66/05.01.08
G3. Use of Cs-137 or high level waste as a deterrent -- Anything that requires massive shielding will probably increase the cost of operations by a factor of 100. Any significant gamma emitter will decay away in less than 300 years and will be of no long term value.	67/05.01.08
National Security This subcommittee of the Advisory Committee had nothing new to add to the PEIS. Other participants of the Advisory Committee agreed with the screening criterion in the PEIS that "there is an urgent need to begin Pu disposition and to minimize the time period that surplus fissile materials remain in weapons-usable form."	68/01.00.00

ceramic-coated pellets contain 1 percent Pu. Therefore, the amount of Pu-loaded, ceramic-coated pellets would be 100 times as great as the amount of Pu for direct emplacement, or approximately 500 t (551 tons) per year.

10 00 00 Comment Number 49

Although shipments may be consolidated into "dedicated trains" of more than one car, the risk analysis has considered regular train services for these shipments. Several court decisions have shown there is no safety basis for the use of "special trains" for high-level nuclear materials. DOT, DOE, and NRC have provided no such direction that special trains will be used for radioactive materials.

10 02 00 Comment Number 50

The values given in Table 4.4.3.3-4 of the PEIS represent the "Total Potential Fatalities" associated with the transportation of Pu oxide, uranium oxide, and MOX, for the Reactor Alternatives category. The quantities presented are a result of direct risk calculations which yield results in "numbers of human fatalities." In regard to accumulating the risks associated with a given transportation process, the maximum risk impacts from the transport of Pu oxide, uranium oxide, and MOX fuel under the Reactor Alternatives may be summed directly from Table 4.4.3.3-4. According to results calculated by the "industry-wide accepted" RADTRAN code, the highest number of total potential fatalities from the transportation of materials from lag storage to fuel fabrication and then to a reactor site is 4.16 for MOX fuel fabrication in the United States. In Europe, the number of potential fatalities for a similar procedural operation would be 4.62. The difference between 4.62 and 4.16 fatalities is essentially negligible. Risk differences between the two "regional" alternatives (that is, the United States vs. Europe) are very small for all stages involved.

10 02 00 Comment Number 51

The human health risks from the transportation of radioactive materials between sites include both radiological and nonradiological impacts to the

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Hanford Communities Advisory Committee

Review of Plutonium Disposition Draft Environmental Impact Statement

Invited Participants*

Mr. Jack Baker
Mr. Walt Blair
Mr. Joe Burn
Dr. John Cakagiri
Dr. Tom T. Claidson**
Mr. Rob Davis
Mr. Lamin R. Dodd
Dr. Fred Evers**
Mr. Greg Field
Dr. Michael Fox
Ms. Janet Green
Dr. Tom Ham**
Mr. Harold Hancock
Dr. John Honekamp
Mr. Rich Hoyt
Mr. Jim Hummer
Mr. Bill Irvine
Mr. Bob Jefferson
Mr. Ron Kalhoun
Mr. Jack McElroy
Mr. Jim Mexa
Mr. Jim Mohan
Mr. Jim Morgan**
Ms. Wendy Nium
Mr. Jim Parnassuth
Mr. Gordon Rogers
Mr. Bill Root
Mr. Don Segna
Mr. Jim Seffen
Dr. Marjorie Swindt
Mr. Leo Thompson
Dr. Lee Tharrton
Dr. Alan Walker**
Mr. Jim Watts
Mr. Craig Williamson**
Mr. Gene Wirth
Dr. Martin Wisnien
Mr. Tom Woods**

Ms. Pam Brown, Hanford Analyst
Dr. Ray Robinson, Project Consultant

*Some of those invited could not participate because of potential conflicts of interest, were participated on an ex-officio basis only, and some had only minor involvement because of time or travel schedules. The majority of those invited did participate providing valuable contributions.
**Sub-committee Chair

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public and workers. The categories of calculated risk include nonradiological accident impacts to the public and workers, nonradiological normal operation impacts to the public (air pollution), radiological accidents to the public, and radiological normal operation impacts to the public and workers. The risk to the public for radiological accidents is an order of magnitude less than either nonradiological accidents or radiological exposures during normal operations.

10 02 00 Comment Number 52

Appendix G of the PEIS discusses the pertinent methodology and associated parameters utilized in the transportation modeling via the RADTRAN code. The scope of this document does not require scientific detail regarding input parameters to exceed that of a programmatic level.

10 02 00 Comment Number 53

This PEIS evaluated the potential for highway accidents and radioactive releases from the 6M shipments during transport in terms of eight accident severity categories identified in NUREG-0170 and implemented through analysis by the RADTRAN 4.0 computer code. The accident categories ranged from the least severe and most frequent accident (Category I) to the most severe and least frequent accident (Category VIII). NUREG-0170 characterizes package response to these accident categories in terms of release fractions based on the package type, transportation mode, and accident category. DOE considers the accident category information presented in NUREG-0170 to adequately cover the transport mode and package types addressed in the PEIS.

10 00 00 Comment Number 54

The CRTs are still being used on the SST.

HANFORD ADVISORY BOARD

A Site Specific Advisory Board Chartered under the Federal Advisory Committee Act

Advisory
US Office of Energy
Environmental
Management
Department of Energy
Washington, DC 20585
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PO Box 21746
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David Nulton
Director, NEPA Compliance and Outreach
Office of Facility Materials Disposition
Department of Energy
PO Box 21746
Washington, DC 20585-3786

Sent by Facsimile to 1-800-826-5156 and by US Mail

May 3, 1996

Dear Mr. Nulton:

Re: Storage and Disposition of Excess Weapons Usable Plutonium and Special Nuclear Materials (SNM) (HAB Advice #46)

The draft Plutonium Programmatic Environmental Impact Statement (PEIS) indirectly considers Hanford as a potential site for certain activities within the scope of the plutonium safe storage and disposition program by the virtue of the site's current capability and plutonium processing. The Hanford Advisory Board is opposed to the present approach to nuclear material storage and disposition like that taken in the PEIS on plutonium disposition. We have on three previous occasions adopted advice to USDOE urging an integrated public discussion on these issues. Therefore, a ROD on the narrow choices presented in this EIS is premature pending the National Equity Dialogue. The Board has not expressed a preference for one of the other disposal options. However, the Board does have a number of values/issues which relate to a plutonium (Pu) and spent nuclear material (SNM) program. Many of these values/issues have been previously provided to you as advice or recommendations for other Hanford programs. These values are:

- Any plutonium or SNM storage or disposal program must be compatible and integrated with the TPA commitments and milestones and should not affect the rate or funding of cleanup. The program would have the safe disposition of Hanford plutonium as a priority.

HAB Committee Address #46
Subject: Storage and Disposition of Excess Weapons Usable Plutonium and Special Nuclear Materials (SNM)
Adopted: May 3, 1996

800 NW Sixth Avenue, Suite 342, Portland OR 97209-2715
Call/text: Conference Room, Facilities Team
Phone (503) 243-3863 Fax (503) 243-3863

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10 00 00 Comment Number 55

Transportation component design specific to this situation is beyond the scope of this PEIS. If design changes are necessary for ISO transport to occur, proper modifications would be expedited to meet the necessary criteria.

10 02 00 Comment Number 56

The number of shipments of LLW and TRU waste is stated in the waste management section for each storage and disposition alternative. The radioactive wastes included in the transportation analysis is shown in Table 4.4.2.2-1. Transportation of the wastes is included for each storage and disposition option as stated in Section 4.4.3.

10 02 00 Comment Number 57

The form and limited quantities of material shipped and the design of the packaging system prohibit criticality. Controls are implemented by following DOT regulations for the TI.

10 00 00 Comment Number 58

The comment was given consideration for the Final PEIS but only current regulations are stated in the document. A list of Federal and State regulations is included in Appendix J.

10 00 00 Comment Number 59

The mode (SST, commercial truck, rail) for shipping materials under each alternative is identified in Table 4.4.2.2-1. The safe secure transport of special nuclear materials is described in the new Section G.6. Transport of immobilized Pu-loaded ceramic coated pellets (1 percent) could be by either SST or appropriate commercial truck. The decision would be made in siting studies if either of the Deep Borehole Categories is selected.

10 02 00 Comment Number 60

RADTRAN analysis considers population densities as explained in Section G.1. Because of the radioactive nature of the material being shipped, the

69/08.02.00

70/08.03.01

7/11.00.01
cont.

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2.	Any plutonium program assigned to Hanford must be fully funded from new funding sources. This funding should include appropriate site infrastructure and overhead costs. Funding should fully cover the cost of treatment, storage and disposal of any new waste stream.	72/07.00.00
3.	The acceptance of plutonium at Hanford should not delay, defer, or negatively impact Hanford cleanup.	73/11.00.01
4.	Appropriate local and regional public information and involvement programs must be conducted by the agencies to ensure that the public is fully informed of the risks, hazards and impacts of such a program. This would be part of the national dialogue on all nuclear materials (noted above) prior to assignment of nuclear materials to a specific site.	74/08.02.00
5.	Any permit or plan approval for new Hanford programs/activities must be fully integrated and must comply with all State of Washington public health and safety rules and regulations.	75/08.03.00
6.	Equity impacts must be addressed in the assignment of new nuclear materials (including plutonium) to Hanford.	76/01.00.00
7.	The transportation of plutonium and special nuclear materials to Hanford storage will require careful planning of routes and consideration of weather emergencies to minimize the likelihood of an accident. Emergency preparedness for minimizing the impacts from an accident will require financial support from DOE for state, tribal, and local involvement, including adequate equipment and training. When materials are shipped, timely notification should be provided to transportation agencies.	77/10.01.00
8.	The choice of disposal options re: Pu will be a determinant for sites such as Hanford. Prior to the choice of a disposal option, complete characterization of the material and the impacts of short and long-term disposition technologies must be reviewed by the public and regulatory agencies.	78/08.02.00
9.	Acceptable processing techniques including waste processing must be developed as an integrated part of any new Hanford storage and disposal program. Permanent disposal of waste plutonium at Hanford is not acceptable.	79/09.11.01
NAB Comment Advice #46 Subject: Storage and Disposition of Fissile Weapons Usable Plutonium and Special Nuclear Materials (DS-46) Adopted May 2-3, 1996 Page 2		M-234

Military Ocean Terminal, Sunny Point, North Carolina, was used for analysis in the PEIS. Sunny Point is a remote, controlled-access port for military ammunition shipments and would likely be the shipping point.

08 03 01 Comment Number 61

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 01 08 Comment Number 62

Comment noted.

05 01 01 Comment Number 63

Comment noted.

05 01 08 Comment Number 64

Clarification was made in Section 2.4.4.1 of the Final PEIS.

05 02 08 Comment Number 65

Clarification was made in Section 2.4.4.2 of the Final PEIS.

05 01 08 Comment Number 66

Criteria pollutants are defined in the *Clean Air Act* (CAA) in a listing of chemical pollutants for which certain concentration levels are not to be exceeded without monitoring and possible mitigation.

05 01 08 Comment Number 67

Comment noted. The Spent Fuel Standard involves a radiation barrier that decays over time.

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10. A "systems" analysis approach should be utilized to select the most effective method for processing and interim storage. This analysis should adequately address public and worker health and safety and environmental issues. 80/08.03.00
 11. If a plutonium disposition mission is assigned to Hanford, every effort should be made to use existing workforce, facilities, technologies, and other resources. 81/09.00.01
- Finally, we note that this FEIS does not address cumulative impacts of nuclear material movement and disposition as required by NEPA. 82/08.00.00
- The Health, Safety and Waste Management Committee of the HAB looks forward to further discussions and working with you on this issue. The Board looks forward to your written response, as called for in our charter.

Very truly yours,

Mary B. Reeves

Marilyn B. Reeves, Chair
Hanford Advisory Board

Attachments: Board Advice #13, 34 and 38

cc: Thomas Grumbly, DOE
John Wagner, DOE
Alice Murphy, DOE
Chuck Clarke, EPA
Mary Riveland, Ecology
Cindy Kelly, Designated Federal Official
Linda Linde, Site Representative
Jim Meza, DOE (by fax)
The Oregon and Washington Congressional Delegations

HAB Comment Advice #46
Approved by the Board of the Hanford Advisory Board
August 2-3, 1994

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01 00 00 Comment Number 68

Comment noted.

08 02 00 Comment Number 69

The Department of Energy acknowledges the commentor's support for coordination and increased understanding of decisions to be made on the storage and disposition of weapons-usable fissile materials. However, the National Dialogue Project is beyond the scope of this FEIS.

08 03 01 Comment Number 70

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 00 Comment Number 71

The Department of Energy acknowledges the commentor's concern about the potential effect that the selection of Hanford for new missions could have on the Hanford clean-up program. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input. The decision process will also give consideration to existing agreement between DOE, the State of Washington, and the EPA.

07 00 00 Comment Number 72

Funding for all alternatives will be through the budget process, and is not a part of the NEPA process.

11 00 01 Comment Number 73

The Department of Energy will not begin implementation of the Proposed Action at any site without having given full consideration to the

environmental, cost, schedule, and policy analyses, public comments, and agreements with various states regarding the clean-up activities on the sites. Therefore, implementation of the Proposed Action is not expected to cause adverse impacts to ongoing programs at the selected site(s).

08 02 00 Comment Number 74

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board. A video produced by the Oregon Department of Energy was underwritten by DOE.

08 03 00 Comment Number 75

It is recognized that the decision to locate any of the alternatives at a site would require coordination with State and local officials on a variety of areas including the mission of the site.

01 00 00 Comment Number 76

Comment noted. Equity will be considered in DOE's decisionmaking process, along with all other factors.

10 01 00 Comment Number 77

Logistical planning and meteorological surveillance are standard concerns which normally receive a great deal of attention during transportation operations such as this; transfer of materials to Hanford will hold no exceptions. Emergency preparedness personnel (that is, Emergency Response Teams) will be supplied with the necessary equipment and training commensurate with DOT, DOE, and NRC regulations. Sufficient funding for these concerns will be available to satisfactorily ensure that potential contingencies be dealt with in an effective and timely manner. DOE provides

liaison with appropriate agencies for special nuclear material shipments. However, due to their classified nature, specific information on times and dates cannot be provided.

08 02 00 Comment Number 78

Before and after decisions are made on a disposition technology or technologies, DOE will conduct studies and technical demonstrations to fully understand the impact of disposition actions. This information will be made available to the public, to the extent possible.

09 11 01 Comment Number 79

The conceptual designs for the storage and disposition facilities have, as part of their design, waste management facilities that would treat and package all waste generated into forms that enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State statutes and DOE Orders. As noted in Section 4.1.10 of the PEIS, waste management activities that would support the long-term storage or disposition of weapons-usable fissile materials were assumed to be in accordance with current site practice. Thus, only LLW and possibly some solid nonhazardous waste was assumed to be disposed of onsite. Any future waste management facilities that may be required to support the long-term storage or disposition of weapons-usable material would be coordinated with any decisions in the waste-type-specific RODs resulting from the Waste Management PEIS and respective site-specific NEPA documentation.

08 03 00 Comment Number 80

Comment noted.

09 00 01 Comment Number 81

Comment noted and will be taken into consideration when DOE is ready to select sites to implement Pu disposition.

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08 00 00 Comment Number 82

The Department of Energy has determined that, based on historical trends and regulatory constraints, impacts associated with transportation of nuclear materials are unlikely and not otherwise significant. Therefore, no cumulative effects analysis of transportation impacts were performed. The cumulative impact analysis is located in Section 4.7 of the PEIS.

HANFORD WATCH, PORTLAND, OR,
LYNN SIMS
PAGE 1 OF 1

08 01 00 Comment Number 1

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

May 6, 1996

USDOE
Office of Fissile Materials Disposition
Washington, DC 20026-3786

Dear Mr. Nulton,

We respectfully request an extension of the deadline for public comment on the Storage and Disposition of Weapon-Usable Fissile Material Draft PDS because we have not had sufficient time to collect and review all available documents from public reading rooms, which we will need to revise and extend remarks.

1/08.01.00

The great dimension of the implications of this project in the economic, research, environmental and social sectors indicate that we should move very carefully concerning this decision making. Please grant an extension for the comment period.

Thank you,

Lynn Sims

Lynn Sims, Hanford Watch
3351 NE 42nd
Portland, OR 97213
503-287-6328

F-009

Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement Comment

The people of Oregon have been and will continue to be impacted by the activities and hazardous wastes at the Hanford Nuclear Reservation. Air and groundwater contamination generated from the Hanford site in Washington are a serious concern to Oregonians because we share a long border, the valuable and irreplaceable Columbia River, a vital part of our environment.

Hanford has already done its part in nuclear production and the people in this region have already paid a terrible price due to the legacy of the volumes of chemical and radioactive wastes produced there.

Chemical and radioactive wastes at Hanford pose severe, very long lived toxic risks. Although the mission at the site has shifted from production to cleanup, critical budget cuts and the problem of inadequate technologies have left the many monitoring, containment and precise cleanup plans yet to be assured or formulated.

Now we face the possibility that Hanford may become involved in activities related to the storage and disposition of warheads and weapons-usable fissile materials under the reactor disposition alternative offered in the current DPEIS. That the DPEIS considers the MOX option at all is inconsistent with any plan to reduce high level nuclear wastes in this country.

The option would also signal to the world that plutonium is a valuable resource and should be endorsed as a commodity to be traded and used in new and continuing nuclear enterprises.

Specifically, we are concerned about:

- *the enormous expenses to the public, both economic and environmental

- *the transport and handling risks of fissile materials

- *the risks involved in fuel fabrication

- *the public apprehension concerning the risks and true costs of nuclear power plant operation

- *the creation of even more waste

- *the dilemma of the lack of technology, funds or an acceptable licensed site for the permanent repository for these long lived toxic wastes

Therefore, we the undersigned strongly oppose the consideration of Hanford as a site, or the WPPSS plants for any operations pertaining to the reactor disposition alternative.

1/09.00.01

2/08.03.01

F-062

09 00 01 Comment Number 1

The construction and operation of a nuclear power reactor would generate economic benefits in the form of new jobs and income generated in the region where the proposed reactors would be located. The reactor would serve to eliminate the surplus Pu, meeting the purpose and need of this PEIS. Additionally, the reactor would generate electricity for commercial and residential use.

Table 4.4.3.3-4, presents total potential fatalities (including both radiological and nonradiological risks) associated with the transportation and handling of fissile materials used in the production of MOX fuel. These materials include surplus Pu, which would be transported from the lag storage sites, and uranium oxide, each of which would be transported to a foreign or domestic MOX fuel fabrication site. Risks associated with the transport and handling of the fabricated MOX fuel to a reactor site are also included in this table.

The risks to public and occupational health and safety related to MOX fuel fabrication are described in Section 4.3.5.1.9 of this PEIS. They are summarized in Table 2.5-3. The health risks from the operation of a MOX fuel fabrication facility are also analyzed in the PEIS which indicates that the operation of a nuclear reactor would not pose significant health risks to the surrounding population.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to new missions at Hanford. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

HANFORD WATCH, PORTLAND, OR,
PAIGE KNIGHT
PAGE 2 OF 2

In addition to objecting to burning MOX in reactors at Hanford, we also oppose using the Fast Flux Test Facility (FFTF), or any other facility at the site for tritium production for the US weapons arsenal. The proposed tritium production is not consistent with USDOE's mission. FFTF is slated for closure in the carefully negotiated TriParty Agreement. Please ensure the mission at Hanford is "cleanup". Do not allow the mission to revert to "military production".

Because it is apparent that a sound technological solution to the disposition problem does not exist, we urge you to aggressively fund development efforts aimed at achieving a real long-term solution to the plutonium problem.

Hanford Action of Oregon, Robin Klein
25-6 NW 23rd Pl. #406
Portland OR 97210
PH: 503-235-2924 FAX: 503-736-0097

Hanford Watch, Paige Knight
2285 SE Cypress
Portland OR 97214
503-232-0848 FAX: 503-287-6329

Don't Waste Oregon Council, Lloyd Marbet
19142 SE Bakers Ferry Rd.
Boring, OR 97009
PH: 503-637-3549 FAX: 503-637-6130

Columbia River United, Greg DeBruler
P.O. Box 667
Bingen WA 98603
509-493-3950

Citizens Interested in Bull Run, Frank Gearhart
P.O. Box 3426
Gresham, OR 97030
PH: 503-663-4777 FAX: 503-669-9429

Northwest Environmental Advocates, Eugene Rosalie
133 SW 2nd
Portland, OR 97204
295-0490

*Paige Knight (23)
p. 1 of 1*

14 00 00 Comment Number 3

Comment noted.

14 00 00 Comment Number 4

Comment noted. During the remainder of fiscal year 1996 and into fiscal year 1997 DOE plans to continue to expand a range of small-scale tests and demonstrations of Pu disposition technologies to fill gaps in our technical knowledge, remove uncertainties in the viability of certain technologies, and to demonstrate the practical usefulness of some of the technologies that might be employed for disposition of surplus weapons-usable Pu.

F-062

HANNUM, WILLIAM H., NAPERVILLE, IL
PAGE 1 OF 1

213 Arlington Avenue
Naperville, IL 60565
5 June 1996

Department of Energy
Office of Fissile Materials Disposition
P. O. Box 23786
Washington, D. C. 20026-3786

Subject: Comments on Draft Environmental Impact Statement: DOE/EIS-0228-D;
Storage and Disposition of Weapons-Usable Fissile Materials

Gentlemen:

The subject draft appears to have been carefully and exhaustively prepared. Those who managed and carried out this effort are to be commended.

I have two comments which I feel deserve attention. These comments are my own, have been prepared on my own time, and do not necessarily represent the view of my employer:

- In evaluating the reactor alternatives, it appears that no credit has been given for the environmental insult avoidance associated with the power generated by the nuclear plants. Since coal is the dominant fuel for electricity generation, and by all projections (including those of DOE) will continue to be the dominant fuel for electricity generation, credit should be given for the reduction in coal burning equivalent to that required to produce the electricity generated by the plutonium burning nuclear plants.
- Among the "Disposition Options Considered But Eliminated From Further Consideration," two reactor options (the modular helium reactor and the integral fast reactor) are qualified as follows: *If [this concept] is developed and successfully operated for other missions, it will be considered for Pu disposition as well.* Given the projected world energy growth, the commitment of many countries to further nuclear development (whether nuclear power is developed and deployed in the U.S. or not), and the involvement of other nations in these two technologies, it must be considered that one or both of these technologies will be developed and successfully deployed for other missions. Therefore, these options must be fully evaluated.



William H. Hannum

1/09.08.08

2/01.05.00

M-263

Comment Number 1

09 08 08

Based on comments received, several sections of the Final PEIS include additional analyses. These sections (in Section 4.9) include Impacts on Uranium Mining and Nuclear Fuel Cycle Industries, Avoided Environmental Impacts of Using MOX Fuel Instead of Traditional Low-Enriched Uranium Fuel in Nuclear Power Plants, and Avoided Environmental Impacts of Using Nuclear Power Plants Instead of Fossil Fuel Power Plants. The Avoided Environmental Impacts of Using MOX Fuel Instead of Traditional Low-Enriched Uranium Fuel in Nuclear Power Plants section in the Draft PEIS includes the health impacts avoided to the public and workers for the mining and milling industries. Other avoided impacts to air quality and waste generated were added to the Final PEIS.

Comment Number 2

01 05 00

The termination of the Integral Fast Reactor project was decided by DOE and Congress in 1994 and is beyond the scope of the PEIS.

Comment ID: P0029

Date Received: April 18, 1996

Name: Steven Hanson

Address: 306 East 4 South

Rexburg, ID

Phone: 208-356-4613

Transcription:

My opinion of the use of plutonium and storage and basically research and investigation into that is favorable. I think it should be done. I think that as we try and find a solution for radioactive materials that we have to deal with it, and I would be in favor of storage both in Idaho and processing, because I feel that it's one of the best ways that we can do to handle this material and use it productively. I my personal feeling of nuclear power is also very good. I would expect to use it effectively and I think that there's a lot of scare tactics that are driving people away because they don't understand it. So, my opinion is favorable. I think we ought to do it. I don't think we have much choice, because the fossil fuels are just not going to last that long. So I'm positive for nuclear power and storage and processing here in Idaho. Thank you.

1/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for additional missions at INEL. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-029

HARLEY, MARY LOU, BRIDGETOWN, NS
PAGE 1 OF 2

01 03 00 Comment Number 1
Comment noted. The CANDU Reactor Alternative is one of the reasonable alternatives analyzed in the PEIS. Should this alternative be selected for implementation of the Proposed Action, agreement with the Canadian Government would be reached on the Pu disposition process, including appropriate environmental analysis with public involvement.

R.R. #4
Bridgetown, N.S.
B0S 1C0
May 12, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786 Washington, D.C.
U.S.A. 20026-3786

RE: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

While some members of the Canadian government have been promoting the idea of bringing the plutonium from the planned arms reduction program into Canada in the form of MOX fuel, this idea has not been debated at any House or public level.

During the recent public hearings on the concept of geological disposal of nuclear fuel wastes, several groups reported concern that the possibility of using MOX fuel fabricated from weapons plutonium in Canadian CANDU reactors had been spotted in American documents (most notably the "Weapons and Disposition of Excess Weapons Plutonium: Reactor-Related Options" by MAS). At these hearings, government officials brushed the issue aside saying it was not yet a "fait accompli". Within a week of the end of Phase I of these hearings the government was promoting this idea. As well as the concept of importing weapons plutonium into Canada in the form of MOX fuel, the ethics of the process by which this idea is being promoted has been called into question.

The United States is capable of handling the excess weapons plutonium to meet the spent fuel standard and you have the primary responsibility for coping with the weapons-grade plutonium.

1. The U.S. light-water reactors are capable of using MOX fuel containing weapons plutonium and have been recommended for this option by the National Academy of Sciences.
2. The weapons-grade plutonium could be embedded in glass logs of suitable specifications in the U.S. and managed in the same way as planned for U.S. defense high-level wastes.

Canadians should not be expected to bear the burden of security, safety and health risks associated with the transportation, storage and use of MOX fuel or the potential hazards and costs of the management of the resultant high-level nuclear waste. You are aware that the use of weapons plutonium as MOX fuel does not get rid of the plutonium. The objective of the MOX fuel approach is to contaminate the weapons-grade plutonium with other isotopes of plutonium and other radioactive material so that the excess weapons plutonium would be no more accessible than the plutonium in commercial spent fuel. Use of MOX fuel would result in significantly higher plutonium in the spent fuel waste management the present waste going into the nuclear fuel waste management

1/01.03.00

1/01.03.00
cont.

M-207

program in Canada. Once through the fuel cycle the spent MOX fuel would be Canada's management problem, at least until it was aged more than a decade; possibly it would be permanently our problem, for hundreds of thousands of generations into the future. Conversion of the weapons plutonium into spent MOX fuel may make it less accessible for bomb production, but the plutonium is still there, still posing a proliferation risk only requiring more care and expense, still releasing radiation, still toxic, still posing a health risk to the planet. The "spent fuel standard" to make weapons plutonium no more accessible for weapons use than the plutonium in commercial spent fuel has not been promoted because it provides safety but because to go beyond this spent fuel standard is not considered justified unless the accessibility of the global stock of plutonium in spent fuel is significantly reduced. However, the level of purity of the plutonium which makes it attractive for weapons also makes it more amenable to directed intervention designed toward rapid reduction of radioactivity over time frames accelerated over those of the natural half-life decay processes. In the haste to handle the security risk, do not lose sight of the health risk posed by this material; ask of any approach what the consequences will be with respect to reducing the toxicity of the material. With respect to the weapons uranium, please take a balanced view. It would be irresponsible to make it more toxic by putting it into the nuclear fuel stream. Please consider management by a means that will not involve converting a portion of it into plutonium and other radioactive materials of higher toxicity than the original uranium. If this spent fuel standard approach for dealing with weapons plutonium is the best interim step, it is the U.S.A. that should be taking that step. You have the capability and the responsibility. There is no justification for Canada to become involved in importing weapons plutonium in the form of MOX fuel.	1/01.03.00 cont.
	2/08.03.01
	3/01.00.00
	4/15.00.00
	1/01.03.00 cont.

Sincerely,
Mary Lou Harley
Mary Lou Harley, Ph.D.

M-207

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentator's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 00 00 Comment Number 3

Comment noted.

15 00 00 Comment Number 4

The HEU covered in this PEIS refers to those materials that are not surplus to national defense needs. Therefore, the path forward for these materials would be storage only.

HATFIELD, SCOTT, BOULDER, CO
PAGE 1 OF 1

4/4/96 Scott Hatfield PO Box 87421 Boulder CO 80506-9721 DE Office of Fissile Materials Disposition: Concerning the Weapons Grade Fissile Disposition PEIS, I support the Clinton Administration's decision to put them in a non-proliferable form. This should be done as soon as possible. Immobilization should be a part of this to prevent formation of toxic plumes. Lacking in the PEIS were critical data on the properties of Pu in glass and ceramics or the electrometallurgical zeolite matrix and how stable are these materials at different concentrations? Also lacking were data on Chlorine-based effects of electrometallurgical treatment. Stabilization processes seem to also have a security shadow. I do not want to see stabilization become an excuse for building nuclear incinerators or next generation nuclear power reactors. Rocky Flats has a culture of promoting nuclear circumventing. There is much danger in a culture such as at RFETS that values Pu as an asset. It is a liability. Consolidation is not as important as transport liability. However, Redcoats have toxic waste! Landfills are in almosts with landfills, and strip mines and oilmen - quads, the building nuclear bomb buildings, not safety. Send it to Texas! No place with it. Sincerely, Scott Hatfield Scott Hatfield Boulder CO	1/08.03.01
	2/05.00.08
	3/05.03.03
	4/05.00.08
	5/08.03.01

M-290

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 00 08 Comment Number 2

All proposed immobilized waste forms have been analyzed to support the comparison of the technical performance related to long-term releases and behavior to other forms currently being evaluated for disposal in an NWPA geologic repository (for example, commercial and DOE-owned spent nuclear fuel and HLW). The results of these analyses are reported in the *Report on Evaluation of Plutonium Waste Forms for Repository Disposal*, Rev. 1, TRW Environmental Safety Systems Inc., March 29, 1996.

05 03 03 Comment Number 3

While this level of detail is lacking in the PEIS, further technical information on disposition alternatives is provided in the Technical Summary Report and related alternative summary reports published beginning in July 1996.

05 00 08 Comment Number 4

Further information on the technical viability of alternatives was provided in the Technical Summary Report and related alternative summary reports made available for public review in July 1996.

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

**HEALTH PROFESSIONALS FOR GLOBAL SURVIVAL,
MONTREAL, QC, ERIC NOTEBAERT
PAGE 1 OF 2**

PROFESSIONNELS
DE LA SANTÉ
POUR LA SURVIE
MONDIALE



HEALTH
PROFESSIONALS
FOR GLOBAL
SURVIVAL

Association Professionnelle de la Santé pour la Responsabilité Nucléaire / Formerly Health Professionals for Nuclear Responsibility
515, av. des Pins ouest, Montréal, QC H2W 1S4 • Téléphone: (514) 987-9709

Montreal, May the 6th, 1996.

U.S. DEPARTMENT OF ENERGY,
OFFICE OF FISSILE MATERIALS DISPOSITION
P.O. BOX 23786
WASHINGTON, D.C. 20026 - 3786
U.S.A.

Re: STORAGE AND DISPOSITION OF WEAPONS - USABLE
FISSILE MATERIALS,
DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT.

To whom it may concern.

The Government of Canada via Prime Minister Jean Chrétien announced during the recent G-7 meeting (April 19-20, 1996) that it considers importing in Canada plutonium fuel for the Candu reactors of the Bruce " A " Nuclear Generating Station on Lake Huron. This plutonium from dismantled U.S. and Russian nuclear bombs would be contained in " mixed oxide " (MOX) fuel.

Our organization, which has been for many years involved in nuclear issues and studies, military or civilian, is deeply concerned with this proposal that we consider totally irresponsible, for many reasons:

1. The Government of Canada has no mandate from the population to make such a proposal with potential serious consequences, and ought to make formal consultations with the all the groups interested in the subject in Canada.
2. This makes Canada a dumping ground for foreign military radioactive waste.
3. It creates huge security problems during the transportation and handling of plutonium (an accidental self-sustained nuclear chain reaction can happen



PRIX NOBEL DE LA PAIX
Nobel Peace Prize
PSSM est le chapitre québécois de l'Association des médecins pour la survie mondiale (Canada)
PPGS is the Québec chapter of Physicians for global survival (Canada)

08 03 01 **Comment Number 1**

The Department of Energy acknowledges the commentator's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input. This will include an appropriate level of analysis by Canada before any decision on burning Pu in a CANDU reactor is implemented.

1/08.03.01

M-175

HEALTH PROFESSIONALS FOR GLOBAL SURVIVAL,
MONTREAL, QC, ERIC NOTEBAERT
PAGE 2 OF 2

PROFESSIONNELS
DE LA SANTÉ
POUR LA SURVIE •
MONDIALE



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SURVIVAL

Association Professionnelle de la Santé pour la Radiosécurité Nucléaire / Formerly Health Professionals for Nuclear Responsibility
515, av. des Pins ouest, Montréal, QC H2W 1S4 • Téléphone: (514) 987-9709

with disastrous consequences).

4. It creates security problems in order to prevent theft of plutonium.

5. The cost linked to the "retubing" of the Candu reactors is very high (about \$ 300 million per reactor), and those reactors may well not be able to function for the planned 25 years period, because they are aging.

6. And finally, it violates the spirit of Canada's non-proliferation stance, which is to isolate the Canadian nuclear industry from the military weapons programs of other countries, in making Ontario Hydro a commercial recipient of military fissile material

1/08.03.01
cont.

For all these reasons, we strongly oppose the idea of importing in Canada the plutonium from dismantled D.S. or Russian nuclear bombs.

Sincerely yours,

Eric Notebaert

Dr Eric Notebaert, President.

c.c. The Right Honourable Jean Chrétien
Prime Minister of Canada.



PRIX NOBEL DE LA PAIX NOBEL PEACE PRIZE

PSSM est le chapitre québécois de l'Association des médecins pour la survie mondiale (Canada)
HPGS is the Québec chapter of Physicians for global survival (Canada)

M-175

Submitted by Dr. Steve Herring
298 Cliff Avenue
Idaho Falls, Idaho 83402
April 15, 1996

1.	A critical requirement for any alternative is that it must assure that the weapons-usable material cannot be clandestinely fabricated into a weapon for countries to use. The NAS study established the "spent fuel standard" as a criterion by which to judge disposition alternatives. According to the spent fuel standard, the plutonium is in a form from which it is as difficult to recover as the plutonium contained in spent LWR fuel. One potential way of meeting the "spent fuel standard" is to incorporate the plutonium in LWR fuel and then to use that fuel in high burnup.	1/08.03.01
2.	Our priorities must be to advocate a safe, technically sound and proliferation-resistant process first, a fiscally responsible alternative second and, only as a third priority, to advocate alternatives based on the INEL.	2/09.00.08
3.	The environmental impacts of the various alternatives are difficult to sort out of the EIS Summary Document without applying much more time and study (probably of the main EIS documents). They are not likely to exceed significantly the impacts of existing-going activities.	3/08.03.01
4.	Disposal of the Pu through burning in commercial power reactors provides a "Plutonium Diversion" for weapons-usable materials. Commercial reactors already produce considerable plutonium (concurrent with burning it up in the fission process). A number of commercial nuclear plants including WPPSS have expressed an interest in using weapons Pu in their plant as a way to lower overall fuel costs.	4/08.03.01
5.	The MIX fuel fabrication facility would likely be built where the Pu storage is consolidated. It is appropriate to support the INEL for this role.	5/08.03.01
6.	According to the EIS, some forms of Pu may not lead themselves to MOX fabrication. For these forms, the INEL should play a major role, either through the ANL-W EIS process or via one of the other immobilization alternatives. If the treated material is shipped out of Idaho in a timely manner, it would meet the terms of the 1995 Waste Agreement.	

ID-001

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Existing LWR Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 00 08 Comment Number 2

Based on comments received, the Summary of the Draft PEIS was revised. The text in the Summary was revised to clarify the comparison of impacts and to delete the reference to "adverse" impacts.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 4

The Department of Energy acknowledges the commentor's support for construction of the MOX fuel fabrication facility at INEL. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative and other Immobilization Alternatives at INEL. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

HERRING, STEVE, IDAHO FALLS, ID
PAGE 1 OF 1

Dr. Steve Herring
298 Call Avenue
Idaho Falls, Idaho 83402-3040

May 6, 1996

DOE-Office of Fissile Materials Disposition
c/o SAIC-PEIS
P. O. Box 23786
Washington, DC 20006-3786

I attended the hearing held in Idaho Falls and have since studied the draft PEIS in more detail. I would like to add the following comments:

1. A critical requirement for any alternative is that it must assure that the weapons-usable material cannot be clandestinely fashioned into a weapon for centuries to come. The NAS study established the "spent fuel standard" as a criterion by which to judge disposition alternatives. According to the "spent fuel standard," the plutonium is in a form from which it is as difficult to recover as the plutonium contained in spent LWR fuel. One assured way of meeting the "spent fuel standard" is to incorporate the plutonium in LWR fuel and then to use that fuel to high burnup.
2. Disposal of the Pu through burn-up use in commercial power reactors provides a "Peace Dividend" for weapons-usable materials. Commercial reactors already produce considerable plutonium (concurrent with burning it up via the fission process). A number of commercial nuclear plants including WPPSS-2 have expressed an interest in using weapons Pu in their plant as a way to lower overall fuel costs.
3. All of the long term storage options seem to be acceptable from the standpoint of safety and environmental impact; however, the option for the Collocation of the Plutonium and Highly Enriched Uranium receives my support as the most favorable alternative. I also believe that any of the Long Term Storage sites proposed could be designed to be acceptable.
4. According to the EIS, some forms of Pu may not lead themselves to MOX fabrication. For these forms, the INEL should play a major role, probably through the ANL-W Electrometallurgical process.
5. The environmental impacts of the various alternatives are difficult to sort out of the EIS Summary Document. These impacts are not likely to significantly exceed the impacts of existing/on-going activities.

I thank you for the opportunity to comment on this draft Programmatic Environmental Impact Statement.

Sincerely yours,

J. Stephen Herring

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Reactor Alternatives. Decisions on storage and disposition of weapon-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Collocation Alternative. DOE agrees that all long-term storage options are accepted from the standpoint of safety and environmental impacts. Decisions on storage alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

09 00 08 Comment Number 4

Based on comments received, the Summary of the Draft PEIS was revised. Text in the Summary was revised to clarify the comparison of impacts and to delete the reference to "adverse" impacts.

M-194

Leo James Hill 3030 Sleepy Hollow Road Falls Church, Virginia 22042-3142 1-703-237-7507	26 March 1996	Written Comments on DOE/EIS-0229-D	Reference 2.4.3 "doubtful that potential proliferation... or host country could recover... without detection."	1/01.06.00
Reference figure 2.4.3.1-2 Security		Geostationary satellites with laser monitoring of sealed downhole with constant reporting to centralized ground command center. Insuring expedient intervention to any attempted breach of secured area.	2/13.00.00	
Reference 2.4.3.1		"earthquakes" Leading edge technology now used for seismic studies of earthquake safe areas, balanced rocks, has the capability of measuring how many hundreds of thousands of years an area of basalt or bedrock has been stable. Newly discovered ionization and weathering measurement capabilities can accurately determine the stability of an area.	3/04.01.00	

M-004

M-004

01 06 00 Comment Number 1
Comment noted.

13 00 00 Comment Number 2
The security aspects of the storage and disposition alternatives will be developed further in detailed designs for the selected alternative(s).

04 01 00 Comment Number 3
Comment noted.

HIND, KURT
PAGE 1 OF 1

Comment ID: P-0022
Date Received: April 18, 1996
Name: Kurt Hind
Address: none given
Phone: 208-526-2212

Transcription:

I currently work at the site. My work phone number is 208-526-2212. I would welcome the bringing of weapons-grade plutonium here for the jobs. I believe that we can store it safely. That it will be safe here, and I would welcome, like I said before, the advertisement of jobs and a more stable economy here. Thank you.

1/08.03.01

08.03.01

Comment Number 1

The Department of Energy acknowledges the commentor's support for additional missions at INEL. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-0022

HODGE, WARD J., MARLETTE, MI
PAGE 1 OF 3

April 20, 1996
Marlette, Michigan 48453

To: U.S. Department of Energy
Office of Fissile Materials Disposition
P. O. Box 23786
Washington, D.C. 20026-3786

Prime Minister Chretien
House of Commons
Ottawa ON K1A 0A6
CANADA

From: Ward J. Hodge
6150 Mayville Road
Marlette, Michigan 48453

Gentlemen: One Planet-- One Letter, One problem:

This is about a political and an economic pendulum that has swung too far to one side. The big news story of 1996 will be that citizens on the North American continent will share many of the same economic, social, and environmental concerns for the future.

As an economist, I find little to cheer about from either our state or our nation's capitol today. Far right ideologies are replacing rational thought. Unprecedented firestorms of anti-regulatory legislation have turned traditional economic theories upside-down. Established regulatory lines between government agencies and our corporations are being rapidly erased.

Subversive agendas are promoting the privatization of public facilities and glorifying competition in our public utilities. Where is the concern on the part of our government officials for the future sustainability of the human race? Please respond to this letter with your plans to address the new wave of citizen anti-nuclear sentiment on your horizon. You are in a unique position to help stop the continued proliferation of nuclear waste on this planet.

I have recently received a draft copy of a news release regarding the sale of USA surplus plutonium to Canada. From one viewpoint, it is immaterial what this will be used for. The news release, from the Nuclear Awareness Project in Uxbridge, Ontario tells about the possible production of mixed oxide (MOX) fuel for use in two of the Bruce "A" nuclear reactors. "A proposal put forward by Ontario Hydro and Atomic Energy of Canada Limited (AECL) through AECL's U.S. Subsidiary, AECL Technologies."

This AECL Technologies proposal is, "Based on the assumption that (the) Bruce reactors will be retubed 'because there is a demand for electricity'". I believe this is a faulty assumption fueled by corporate agenda needs to continue a government supported planet-wide nuclear power base that is not sustainable.

M-048

HODGE, WARD J., MARLETTE, MI
PAGE 2 OF 3

Page 2 - U.S. Department of Energy/Ward Hodge

If I read the reports correctly, this exchange of considerable Canadian money for surplus U.S. Plutonium will mean trucking monthly shipments of approximately 2 metric tons per year to Canada for 25 years. No where do I read that there is a guarantee that this is a safe way to dispose of 50 metric tons of nuclear poison.

The trucks moving this waste will travel within a short distance of where I am presently living-- across the Blue Water bridge at Port Huron into Sarnia Canada. To me, this seems an outrageous crap-shoot and a waste of Canadian financial resources.

According to the Nuclear Awareness Project (NAP) draft, The AECL Technologies proposal boasts that a Provisional Environmental Assessment could likely be avoided by treating the MOX fuel "Mission" as being exempt under the Environmental assessment exemption granted to Bruce "A" reactors in 1976.

(Haven't we learned anything in the past twenty years?) Also according to the NAP draft, "The original plutonium is not actually eliminated and additional plutonium is created within the fuel bundles in the process."

As this is being written, USA President Clinton is involved with other world leaders and Russia's Yeltsin to agree on a nuclear test ban sometime in the future. In today's news, Our President uses superlatives to describe what this will mean in our future.

April 1, this year, Canada's GLOBE AND MAIL reported that, "Senior government sources confirmed that Prime Minister Chretien supports (this) MOX fuel proposal, including importing Russian MOX fuel for use at the Bruce reactors... Chretien is apparently planning to endorse the whole scheme at the April 19-20 1996 Nuclear Safety & Security Summit of world leaders in Moscow."

Sir, It is no secret that we must do things differently in the next century if we want a sustainable future. First nation Americans continue to look ahead seven generations, while most of the ancestors of European emigrants in North America consider themselves lucky if they can look ahead to their next pay check, or their next election. Is that the kind of progress that we want here?

Albert Einstein is quoted in Chapter three of a new book about W. Edwards Deming, "THINKING ABOUT QUALITY -- Progress, Wisdom, and the Deming Philosophy."

"The significant problems we face cannot be solved at the same level of thinking we were at when we created them"

Before any further action is taken on either side of our mutual border, all government and corporate officials involved should consider the implications of the following:

M-048

Page 3 - U.S. Department of Energy/Ward Hodge

1) In a January 1994 WAR AND PEACE DIGEST article headlined, "Physicist Chernousenko speaks Out on Horrors of Chernobyl", we read that a "Cover-up (was) lifted during U.S. Speaking Tour."

"Vladimir Chernousenko, the heroic Ukrainian Nuclear physicist who supervised the "clean up" of Chernobyl, reveals the true magnitude of the disaster. Like a voice crying in the wilderness, he is now committed to alerting the world of the fatal dangers of nuclear power. This may be his final effort. A victim of radiation poisoning resulting from the Chernobyl accident, Chernousenko is now dying of cancer."

2) Harvey Wasserman, Senior Adviser for Greenpeace, has written a message in the latest Mother Jones magazine headlined, "Slaying The Nuclear Dragon." According to Wasserman, "A combination of strong activism and bad economics has halted the building of nuclear reactors in the U.S. and Europe... Asia is a different story." (Is development so dear and life so cheap in China and India that nuclear power is the only option there?)

3) In the January/February, 1996 WORLD WATCH Magazine Christopher Flavin has written about the next Energy Revolution entitled, "POWER SHOCK". He says that we may soon witness the most dramatic changes in a world energy economy in a hundred years. He writes that, "Once technological change gathers momentum, it can move at lightning speed." He includes solar electrical power and fuel cells in his analysis. "In a new joint venture called EnergyWorks, Bechtel Enterprises, Inc., and PacifiCorp, a giant utility... will pursue projects around the world based on wind turbines, biomass, industrial energy efficiency, and other technologies that most large energy firms have spurned as puny..."

Sir, I speak against any further development of nuclear power, both in this hemisphere and anywhere else on this planet until we have solved the problem of disposing this life-threatening waste, some of which can be with us for at least a quarter of million years. That, in itself, is too long to even comprehend in a rational manner considering the frailty of life here, and the speed at which we are presently destroying our natural resources and our eco-systems.

On this continent we are neglecting our future because we are in denial about our present, and have forgotten much of our past. On both sides of our border, government officials working with multinational lobbyists, must stop measuring human progress in terms of dollars gained and natural resources destroyed. If Canada is doing this as suggested, to help nuclear disarmament efforts of the USA and Russia, I believe it to be folly of the worst sort that will not reflect well on this administration or your department.

Sincerely,



1/08.03.01

M-048

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

HOLDEN, PAULA, SEATTLE, WA
PAGE 1 OF 1

7021 Sand Pt. Wy NE
Seattle Wash 98145
April 30, 1996
Re Plutonium Forum
Comment for the Storage &
Disposition of Weapons-Usable
Fissile Materials Draft Programmatic EIS

To Whom It May Concern:

My recommendation for the
storage of this waste is
that it always remain
above ground and remain
at whatever geographic
location it is currently
located.

To bury/move this waste
would be highly dangerous.

As long as the United States
produces nuclear energy &
nuclear weapons, we will
need to continue spending
personnel to monitor these
dangerous waste.

Thank you for considering my
comments.

Sincerely,
Paula Holden

1/08.03.01

2/08.03.01

M-220

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for long-term storage of fissile materials. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

HYATT, LINDA, DALLAS, TX
PAGE 1 OF 1

Comment ID: P0038
Date Received: May 1, 1996
Name: Linda Hyatt
Address: Dallas, TX

Transcription:

I wish to express my support for jobs and development in the Panhandle that don't endanger workers. I have family members that live there, and I also am concerned about the natural resources in Texas, and especially our agricultural products. Thus, I am opposed to any plutonium processing in the Texas Panhandle. Also to bringing plutonium to Pantex from other sites, and I am opposed to any long-term storage of plutonium over the aquifer in that area. Thank you very much.

1/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-038

ICF KAISER ENGINEERS/DANA ENGINEERING INCORPORATED,
KENNEWICK, WA, WILLIAM P. DANA
PAGE 1 OF 1

09 08 01 Comment Number 1

The primary purpose of the Fissile Materials Disposition Program is to store and dispose of surplus weapons-usable fissile materials in a manner that achieves both national security and ES&H objectives. Selection of a Preferred Alternative was based on numerous factors including socioeconomic. While the creation of jobs is a benefit of the program, it is not the only factor used to determine the alternative or the location for implementing a Federal action.

READER RESPONSE CARD

The purpose of this card is to encourage communication between readers of the Newsletter and the Office of Fissile Materials Disposition. Your views, comments, and suggestions are appreciated.

Name: William P. Dana ICF Kaiser Engineers 98%

Address: 4800 S. July St Kennewick, WA 98533 MD-001

City, State, Zip: Kennewick, WA 98533

Affiliation: ICF Kaiser Engineers / Dana Engineering Incorporated

Comments: The plutonium burning plan is not the best way to deal with excess fissile material. It is better to store it in a secure facility until it can be used for energy production. The Office of Fissile Materials Disposition, MD-01, Newsletter, Please send response card to: 1150 Independence Ave., S.W., Washington D.C. 20540

1/09.08.01

M-001

**IES UTILITIES, CEDAR RAPIDS, IA,
WALTER NODEEN
PAGE 1 OF 1**

08 03 01 **Comment Number 1**

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment ID: P0040
Date Received: May 8, 1996
Name: Walter Nodeen
Principal Engineer of Nuclear Fuel
Organization: IES Utilities
Address: Cedar Rapids, Iowa

Transcription:

We operate the Duane Arnold Energy Center Nuclear Power Station which is a BWR. I just wanted to register our comments on the FEIS and say that we are much in favor of going ahead with the plutonium disposition that uses the plutonium for reactor fuel. In fact, we hope to be one of the reactors that is able to utilize that fuel. We think that is the best process and best policy to follow for several reasons. It saves the energy content of the plutonium instead of just wasting it by throwing it away. That appears to us to be the best way to go. Thank you.

1/08.03.01

P-040

JOBE, LOWELL A., IDAHO FALLS, ID
PAGE 1 OF 1

14469 N. 55th E.
Idaho Falls, ID 83401
May 7, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

re: Storage & Disposition of Weapons-Usable Fissile Materials DPFEIS
Gentlemen:

As a retired Systems Engineer and having worked in the water and waste treatment industry, 20 years at the INEL CPP plant, taught chemical engineering, and developed a Process Technology program at EITC, my judgement of the DPFEIS document is that it does not consider the real final solution to the destruction of weapons-usable fissile materials. The only probable answer to this problem that I have seen is the IFR (Integral Fast Reactor) developed at ANL, because it is the only option I know of for providing a closed-loop system to destroy Pu and other actinides by recycling them back to a fast reactor, using an electrometallurgical process to separate fissile materials from fission products. The recycled fissile materials are so radioactive and the Pu so pure as to be non-proliferable. The by-product stream contains a lower volume of radioactive fission products and other materials than the original fuel elements, with a lower heat load for final disposition. The side advantage of providing additional power, using a passively safe reactor that can't undergo devastating environmental consequences of Chernobyl or TMI are powerful reasons to consider the IFR for this and for the even more extensive Pu/SNF problem coming up in the near future.

To merely convert this fissile material into a form for burial either as glass or ceramic logs or as SNF from a LWR does not render it permanently free from proliferation at some future date. The President's Non-Proliferation Policy is inconsistent in stopping all Pu processing in the U.S. while supporting it in western Europe and Japan; also in seeking to eliminate accumulation of HEU and Pu, yet stopping further development of newer, safer nuclear power reactors such as the IFR, which would reduce HEU and Pu inventories. The IFR appears to me to be the only currently valid way to meet the President's Non-Proliferation Policy. Yet I find no mention of the rest of the 37 alternatives for Pu disposition referred to on p. 5-6 of the Summary document, nor in Vol. I, as referred to in its Foreword. Western Europe, Russia and Japan have given no indication of backing down from their use of Pu or the PUREX method of reprocessing, which produce Pu for nuclear weapons.

Thus, I place little credence in this Draft PEIS for solving the real problem of destroying Pu, let alone maximizing power generated from this resource and environmental protection from the by-products. To not do so is immoral, illogical, and is a symptom of the worst of our throw-away culture; total systems thinking is required for the best interests of the U.S. and the world.

For what could possibly be used from this DPFEIS as a reasonable alternative, I consider the ANL Electrometallurgical Alternative as being the most cost effective of any alternative. Since it requires the least area, equipment, personnel of any; it showed up as best in the comparative tables on most items. The equipment and information might be usable if the U.S. wakes up to its real responsibilities; let science & engineering make the decisions.

Respectfully submitted:

Lowell A. Jobe
Lowell A. Jobe

1/14.00.00

1/14.00.00
cont.

2/08.03.01

M-186

14 00 00 Comment Number 1

During the screening of alternatives for inclusion in the PEIS, a Reactor-Burning concept was evaluated involving a variation of the Integral Fast Reactor concept. However, this concept, which would use a reactor fuel cycle design still under development, would be more costly and less timely than other mature reactor options. The development program was recently terminated by the Administration and Congressional action. Since Pu disposition can be accomplished using existing technologies, there is no justification for developing this advanced technology for Pu disposition.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

Comment ID: P0026
Date Received: April 18, 1996
Name: Rob Johnston
Address:

Transcription:

I want to comment on the plutonium disposal. I prefer that they use it in light water reactor and use the energy up as available. It's a smart way to do it. It's economically supported through scientific research, and I think it's a waste of taxpayer's dollars to just dispose of it. Thank you.

1/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator's support for the Existing LWR Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

JOLLEY, MICHAEL F., CHURBUCK, ID
PAGE 1 OF 1

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Michael F. Jolley
5423 Yellowstone Ave.
Chubbuck, Idaho 83202

Secretary Hazel O'Leary
U.S. Department Of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-2786

9 April 1996

Dear Secretary O'Leary:

In response to the call for public comments about the disposition of the United States Fissile materials, I wish to add my opinion for the record.

I strongly believe that all fissile material should be used for the production of electricity for the United States. This should be done, in similar fashion, as the proposed Idaho project. I understand that this would result in the production of more nuclear waste. However, I believe strongly that the research over the past few decades at the Idaho National Engineering lab has provided a safe way to deal with nuclear waste.

Furthermore, this proposal would reduce the need for hydroelectric power production. Specifically, the Pacific Northwest would benefit with greater Salmon and Steelhead runs.

Respectfully,

Michael F. Jolley

1/08.03.01

F-004

08 02 00 **Comment Number 1**

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.

01 05 00 **Comment Number 2**

Comment noted.

01 02 00 **Comment Number 3**

The purpose of the Proposed Action for Pu disposition is to convert Pu into proliferation-resistant forms that meet the Spent Fuel Standard (options for long-term disposition of Pu should seek to meet a standard that makes Pu as inaccessible for weapons use as the much larger and growing quantity of Pu that is found in spent nuclear fuel from commercial power reactors, as suggested by the NAS), thereby fulfilling the President's Nonproliferation Policy. The disposition alternatives would convert 100 percent of the material into a proliferation-resistant form.

 United States Department of Energy	NAME: (Optional) <u>DAVID K. KAHN</u> ADDRESS: <u>220 LINDEN DE IDAHO FALLS ID 83401</u> TELEPHONE: <u>208.524-3126</u> I WOULD LIKE TO OPEN MY COMMENTS WITH AN OBSERVATION I HAVE MADE. DURING MY REVIEW OF INFORMATION AVAILABLE TO THIS DEPT. P.E.T.S. FOR STORAGE AND DISPOSITION OF WEAPONS-usable fissile materials, IT HAS BECOME OBVIOUS TO ME THAT THIS WHILE FULFILLING IS NOTING BUT A NECESSARY EVIL. FURTHER, THE DOE, THIS IS EVIDENT BY THE SCANT AMOUNT OF INFORMATION AVAILABLE AT THE PUBLIC MEETINGS. WAS THIS AN ATTEMPT TO INFLUENCE THE PUBLIC WITH AS LITTLE INFORMATION AS POSSIBLE. AMERICANS ARE TIRED OF GOVERNMENT FILLING THE WORD OVER OUR EYES. I FOUND IT NECESSARY TO REVIEW THE "SUMMARY REPORT OF THE SCREENING PROCESS". THIS DOCUMENT IS FURTHER EVIDENCE THAT DOE AND GOVERNMENT IN GENERAL IS STILL TRYING TO PULL THE WOOD OVER OUR EYES. IT SEEMS THAT THE DOE HAS AN AGENDA AND THAT THIS "SCREENING PROCESS" WAS A FRONT FOR THAT AGENDA. IT IS NICELY DISGUISED AS A TECHNICAL PROCESS OF POLITICS. IN REALITY IT IS A SELF-DEFENDING INCONSISTENT DOCUMENT LACED WITH POLITICS AND TECHNICAL ASSUMPTIONS AND ENVIRONMENTAL "TECHNOBAGGLES". ANYONE COULD EASILY CHECK THESE IN THIS SCREENING PROCESS TO MAKE SURE THEY LOOK SOLID. WITHOUT GOING INTO DEPTH (A RELATIVELY LIMITED SKILL) I WILL MAKE A FEW SELECT POINTS. THE HOLE I FIND ARE VERY FUNDAMENTAL AND START WITH SUCH BASES AS THE NAME "SCREENING AND DISPOSITION" SEEMS TO IMPLY STOPPING AND GETTING RID OF. IF THIS PROGRAM IS CARRIED OUT TO ITS CONCLUSION HOW MUCH PLUTONIUM WOULD BE LEFT? WITH MOST OF THE ALTERNATIVES, 100% OF THE PLUTONIUM WOULD BE LEFT. IT WOULD BE IN A DIFFERENT FORM, MAYBE EVEN HARDER TO STEAL, BUT IT WOULD ALL STILL BE THERE! PAGE 1	1/08.02.00	2/01.05.00	3/01.02.00

F-052

KAHN, DAVID K., IDAHO FALLS, ID
PAGE 2 OF 4

01 05 00 Comment Number 4

The screening process provided a reasonable basis for evaluating options for further consideration in a report that was made available in March 1995.

01 05 00 Comment Number 5

In considering the technical maturity of an option for Pu disposition, DOE looked at the risks and uncertainties associated with the development and implementation of the option, the time and cost required to minimize risks and uncertainties, and how these factors affect DOE's ability to accomplish the disposition mission. Though the borehole category may not be as developed and mature as the reactor and immobilization categories, it does provide a category of technology alternatives for Pu disposition different from the other two. The borehole category gives three different technology paths for consideration of disposition alternatives, of which one or more could be selected to fulfill the PEIS purpose and need.

3/01.02.00
cont.

4/01.05.00

5/01.05.00

United States Department of Energy

NAME: (Optional) David Kahn
ADDRESS: 370 LINCOLN DR. IDAHO FALLS, ID. 83401
TELEPHONE: (208) 524-3126

IN MY BOOK THAT IS NOT DISPOSITION, CONSIDERING YOUR READING
ALTERNATIVES, THE BEST OF YOUR ALTERNATIVES THERE WILL BE
BE MORE THAN 90% OF THE ORIGINAL PLUTONIUM LEFT. IT MUST
GRADUALLY STANDARDS 10% COMPLETION IS FAILURE. THE GRADING
STANDARDS 5% FAILURE WITH GRADUALLY WITHIN 50%
COMPLETION AS FAILURE.

YOU START YOUR SUMMARY REPORT BY LISTING THE MEMBERS OF
YOUR SCREENING COMMITTEE AND THE TECHNICAL ADVISERS FROM THE
NATIONAL LABORATORIES. I NOTE THAT THERE IS NO REPRESENTATIVE
FROM THE NATIONAL LABORATORIES THAT HAS BEEN INVOLVED IN NUCLEAR
RESEARCH AND DEVELOPMENT SINCE THE MOMENTUM PROJECT INTRODUCED
US TO THE POWER OF THE ATOM. WAS THIS TO PREVENT AWARENESS
NATIONAL LABORATORY FROM INTERFERING IN YOUR "SCREENING PROCESS"
WITH SUCH UNUSUAL THINGS AS PERTINENT FACTS OR USEFUL
INFORMATION?

YOUR SUMMARY OF SCREENING RESULTS LIST ALTERNATIVES ELIMINATED
DUE TO "TECHNICAL MATURITY, POLICY", HOWEVER THE LIST OF POTENTIAL
DISPOSABLES LISTS NO DEFINITION FOR "POLICY". THIS SEEMS LIKE
A DEVIATION FROM TECHNICAL MERIT BY HEADGIRL JUMP INTO POLITICS.
THE DEFINITION OF TECHNICAL VIABILITY CONTAINS WORDS LIKE "NOT
LIKELY", "REASONABLE" AND "TIMELY" WHICH ARE OBVIOUSLY SUBJECT
TO INTERPRETATION DEPENDING ON WHICH INTERPRETATION THEY ARE APPLIED
TO.

YOUR TECHNICAL MATURITY DEFINITION IS USED TO ELIMINATE SOME
ALTERNATIVES, YET IT FITS SOME ALTERNATIVES STILL BEING CONSIDERED.
FOR EXAMPLE, THE TABLE OF RELATING RATINGS AMONG DISPOSITION OPTIONS
(FIG. 4-3), ALTERNATIVE D-2/3 "THE DEEP BOREHOLE METHOD" LISTS
TECHNICAL VIABILITY AS UNCERTAIN YET IT IS STILL A VIABLE OPTION.

Page 2

F-052

01 04 00	Comment Number 6	The purpose of the Proposed Action is to convert Pu into a proliferation-resistant form that meets the Spend Fuel Standard in a prompt manner. Destruction of Pu is not a necessary requirement for meeting the purpose of the Proposed Action.
01 05 00	Comment Number 7	The Department of Energy developed screening criteria which were used as a basis for narrowing technology options for disposition. This criteria were provided to the general public for comment and discussed at the scoping meetings. The criteria were changed as a result of public comment. Other factors were considered in the screening process, but were not included as "criteria."
01 00 00	Comment Number 8	The degree of fissile materials destruction and impact on U.S. energy needs were among the factors considered. However, in some cases, such as vitrification, these factors were outweighed by other benefits.
01 00 00	Comment Number 8	The technologies selected for evaluation in the PEIS will be capable of starting disposition in 8 to 10 years and finishing in 16 to 20 years (that is, in much less time than 20 to 50 years). Less mature technologies would take much longer due to the greater degree of R&D required. Therefore, more time would be required to start disposition.
01 00 00	Comment Number 8	Comment noted.

United States Department of Energy

NAME (Optional) DAVID K. KAHN
 ADDRESS 370 LINCOLN DR IDAHO FALLS ID 83401
 TELEPHONE (208) 527-3226
 THIS MAKES ABSOLUTELY NO SENSE.

THE LIST OF DISPOSITION OPTIONS THAT WERE ELIMINATED CONTAINS THE FOLLOWING SENTENCE IN THE NARRATIVES FOR 2 OF THE ALTERNATIVES: "SINCE THE ADVANCED DISPOSITION CAN BE ACCOMPLISHED USING EXISTING TECHNOLOGIES, THERE IS NO JUSTIFICATION FOR DEVELOPING THIS ADVANCED TECHNOLOGY FOR THE PURPOSE OF ADVANCED DISPOSITION." SINCE NONE OF YOUR ALTERNATIVES INVOLVE BEING DISPOSED, THIS STATEMENT WOULD MEAN THESE ALTERNATIVES WERE INCORRECTLY ELIMINATED. IF EXISTING TECHNOLOGIES CAN ACTUALLY ACCOMPLISH DISPOSITION, MY QUESTION TO YOU IS: WHERE'S THE GREEK?

IN THE SUMMARY OF PUBLIC INPUT THERE IS MENTION OF OTHER "MAJOR" CRITERIA WHICH WAS IMPLIED AS IMPORTANT, THAT INCLUDE: "DISCOURAGE OF FISSILE MATERIALS DESTRUCTION."

IMPACT ON U.S. LONG TERM ENERGY NEEDS.

THESE COMMENTS WERE ORIGINALLY DISCARDED. OTHER COMMENTS SAID AS "20 AND 50 YEARS TO START AND FINISH, RESPECTIVELY, ARE TOO LONG." REQUESTED IN OTHER RATINGS FOR "MAJOR TECHNOLOGIES" WERE BEING USING INCORPORATED AND IMPROVE BEING SYSTEMS DESIGN. SUPPORTS ITS OWN ACTION BY USING AND DISCARDED COMMENTS AS NECESSARY.

IN CONCLUSION I WOULD LIKE TO SAY THAT YOU ARE NOT AT THIS POINT OF THE SIMPLE AND ADVANCED PROBLEM A LESS THAN ASSURING YOUR GOALS AND DESIRES ARE INCULCATED AND SCATTERED THROUGHOUT YOUR DISCUSSION. THE PROBLEM WOULD BE MORE APPROPRIATELY TITLED "SIMPLE AND COMPLEXION OF ADVANCED AND H.E.U. TO NON-NUCLEAR WASTE FORMS AT GREAT COST TO THE PUBLIC." IN THE INTEREST OF TIME AND SPACE, I HAVE LISTED ONLY A FEW OF THE MANY FACTS IN YOUR SCREENING.

Page 3

6/01.04.00

7/01.05.00

8/01.00.00

F-052

KAHN, DAVID K., IDAHO FALLS, ID
PAGE 4 OF 4

 United States Department of Energy	
NAME: (Optional) <u>David K. Kohn</u> ADDRESS: <u>370 LINDEN DR. IDAHO FALLS, ID. 83401</u> TELEPHONE: <u>208-324-3126</u>	9/01.04.00
PEIS'S. I HAVE ALREADY SUBMITTED MANY GOOD PROJECTS. I HAVE BEEN GIVEN A CHANCE OF THE "LAST RUN" INTERVIEW. THE FUTURE BEHIND DISCONTINUED THE LINDEN PROJECTS. THEY ARE ALSO THE ONLY OTHERS THAT I HAVE NOT YET OF. I HAVE BEEN THE MONEY WE INVESTED IN TO MAKE THIS PROJECT. THE ONLY WAY WE WILL EVER ELIMINATE THIS PLUTONIUM PROBLEM IS TO BURN IT UP IN A REACTOR. THEN RECYCLE IT BACK INTO THE FRENCH REACTOR. AGAIN, IT IS A GOOD, NO PROBLEM, NO MESS. THE FRENCH AND JAPANESE ARE DOING IT. THE THEORY IS PROVEN. DESPITE YOUR CLAIMS, SD, WHY MEN'T WE DO IT? THE GREATEST FEAR OF ANTI-NUCLEAR FRONTIER ENVIRONMENTALISTS IS THAT WE WILL FIND AN ANSWER TO THE NUCLEAR WASTE PROBLEM. THIS WOULD ELIMINATE THEIR ONLY REAL ARGUMENT AGAINST NUCLEAR POWER. THE INTEGRAL FAST REACTOR CAN AND HAS BEEN WITHIN A GOOD PROGRAM. WITH ITS RECYCLE PROCESS IT CAN BURN THE SPENT FUEL THAT BURNS EVERY NUCLEAR POWER PLANT IN THE U.S. IT CAN GENERATE MORE POWER, GROWING BURNING WASTE THAN THOSE REACTORS GENERATED MAKING THE WASTE. WHY IS THE DOE SPENDING MONEY TO SHUT THIS PROJECT DOWN WHILE IT IS ASKING AMERICANS FOR MORE MONEY TO RE-EXAMINE ITS OWN PROGRAM? ANOTHER WAY! THE DOE NEEDS TO RE-EXAMINE ITS OWN PROGRAM. IT IS SELLING OUT AMERICANS' ENERGY FUTURE TO SATISFY SOME DOMINANT POLICY THAT HAS VERY LITTLE TO DO WITH AMERICAN FUTURE. NEEDS IN THE NOT-TO-DISTANT FUTURE AREN'T ENOUGH. THE DOE NEEDS MORE FUNDS. IT NEEDS TO ENHANCE A RESEARCH MORE THAN IT IS CASE OF NUCLEAR WASTE. IT NEEDS TO STOP CARBON DIOXIDE IN THE SILENT, CANCELLING PROJECTS THAT ARE ALMOST COMPLETE, OR HALF- FINISHED. IT NEEDS TO STOP WASTING TAXPAYER MONEY.	
10/01.04.00	
Sincerely, <u>David K. Kohn</u> Page 4	

F-052

01 04 00 Comment Number 9
Comment noted.

01 04 00 Comment Number 10
Comment noted.

KESLER, MIKE, RIGBY, ID
PAGE 1 OF 1

08 03 01 **Comment Number 1**

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment ID: P0016
Date Received: April 18, 1996
Name: Mike Kesler
Address: 4320 East 540 N
Rigby, ID 83442
Phone: 208-745-8552

Transcription:

It seems as though we had a perfect solution or dealing with this with these warheads and the weapons grade plutonium when we had the IFR project going. I mean burning it through those reactors would definitely take care of it. It would feed the reactors for many years to come and provide us with an almost free source of power by doing that, but it seems that they didn't think about it. Anyway, they could still revive the project or burn them in other reactors, I guess, if that's what it takes, but that seems the most viable alternative to getting rid of this waste or the byproducts from the nuclear weapons. Thank you.

1/08.03.01

P-016

KEEVAN, MARCIA, AMARILLO, TX
PAGE 1 OF 5

Theresa Towner
Amarillo, Texas

This opportunity to present on the status of the nuclear weapons complex is a democratic process, and I like democracy. But, do we, after four years of solid attempts to end the secrecy surrounding the contaminated facilities of the Cold War effort, do we yet have enough information to give you of the D.O.E. our informed consent? Are all of the important danger aspects in the public domain, or are many vital documents concerning soil, air, and groundwater contamination still being suppressed?

We can not fix a problem we are not permitted to face. We call on the D.O.E., when they say the answer, the D.O.D., the City of Amarillo and the State of Texas to correct, once and for all, the unethical situation that prohibits documents such as the June 12 Second-Step Assessment (which was prepared by Argonne Nat. Lab.) from being readily available to the general public as well as to civic leaders.

Now can you ask a community to look forward when we are not even permitted an honest peek back at them? When we cannot even view an accurate picture of the present situation? The Contamination History of the Pantex Plant, as well as the implications of our present and future well-being, is not the type of information that should be withheld. We own this contamination. We citizens of America pay the D.O.E.'s bills, it is not "un-American" to expect the government to account for its actions. Rather, it is (accounting) exactly what a democratic government must do.

1/08.02.00

TX-060

08 02 00 Comment Number 1

All of the documents used to prepare this PEIS have been made available to the public. Copies of the reference documents have been placed in DOE Public Reading Rooms near each of the potentially affected sites.

KEEVAN, MARCIA, AMARILLO, TX
PAGE 2 OF 5

What a very sad day this is. This is a day
in which some of our leaders ^{freely} demonstrated
that we aren't evil enough to handle the truth
Some identify the act of requiring government to
to account with the act of yelling "fire"
in a crowded theater. Such a comparison is
both untrue and un-American.

Our my fellow citizens to become an unevly,
notewort lot of we discover that some in our
leadership have not had our best interests at heart?
Are we too immature, after 200 years of democracy
to handle the truth about mistakes we have allowed
the government to make? Will you, of the R.O.C.,
respect our comments and opinions knowing
that we are submitting these based on
only partial truths?

This political in-fighting must stop -
The facts need to see the light of day,
the public needs to hear them. Some of
the hidden information is depressing - OK WELL!
Some of the hidden information involves deception - UNRETRIBUTIVE
Some of the hidden info shakes our fragile
perceptions of reality - THAT'S LIFE, FOLKS!

Improving the condition of the human spirit
is with a noble pursuit, and any contemplations
we can make towards such is worth it.

TX-060

KEEVAN, MARCIA, AMARILLO, TX
PAGE 3 OF 5

Let us not underestimate our democracy. Our
nation fought a long, bitter, Cold War, and yet,
have we honored the American casualties
of that war? The sacrifices made
by unknown men, women, children, and
even children get to come? Failure to
recognize such sacrifice made for such
a long, costly war is unpatriotic.
The continuing attempts to try to diminish
the damage done by Cold War contamination—
values only to dishonor the dead and
and still dying casualties in our nation.
Whether we are in or out of uniform,
a life is a life, and lives sacrificed
in war deserve recognition, not
score.

Panther is directly on a geological
fault. This fault has been active during
this century. Earthquakes strong enough
to crack a farm building have occurred.

Panther, the Superfund site, is currently
operating under no permit with the state
of Texas. Records show that Panther is
monitored for some 160 different contaminants.
Why?

2/09.05.04

3/09.04.04

TX-060

09 05 04 Comment Number 2

Section 3.5.5 of the Final PEIS provides a description of the seismic condition of the Pantex area and notes that the area is relatively free from earthquakes. It also notes that little or no damage could occur as a result of an earthquake. Appropriate seismic criteria will be used for any facility upgrades or new facility designs.

09 04 04 Comment Number 3

Activities conducted under the Superfund Program do not require permits; however, Pantex does have appropriate permits and all administrative requirements associated with the applicable permits must be adhered to.

A full suite of contaminants is monitored to understand the nature and extent of the contamination in order to fully protect human health and the environment.

KEEVAN, MARCIA, AMARILLO, TX
PAGE 4 OF 5

(next page, just paragraph, then this)

I still on the D.O.E and the
State of Texas to establish a
standard for multiple contaminants
in water rather than measuring
contaminant by contaminant -
I do not wish to have a
glass of drinking water with
20-100 tiny many contaminants,
all of which individually fall
below "safe" drinking water
standards.

TX-060

KEEVAN, MARCIA, AMARILLO, TX
PAGE 5 OF 5

Panther did not know that such contamination would spread to the groundwater.

The use of Strontium-90 to test ~~environment~~ containment at the firing sites is an unacceptable, unpleasant fact. Please tell us more about this, as well as the other open air experiments conducted at the site. DV particles from the test explosions at the firing sites spread into the air, land, and water on and off site. DV is toxic and radioactive. While I thank you for wanting to clean it up, once again, I must say, tell us more!

In closing, I regret that our local business leaders used your hearings to blast our United States President and honorable Sec of Energy. I appreciate all efforts to make a historically negligent, dangerous industry safer and more ~~accountable~~ accountable.

TX-060

01 04 00 Comment Number 1

The Space Disposition Option was eliminated during a technology screening process that preceded the PEIS. There were several reasons for eliminating this option, including safety, cost, and environmental concerns.

Comment ID: P0030

Date Received: 04/25/96

Name: W. H. Keisimeyer, M.D.

Organization: Augusta Hypertension

Address: 1021 15th Street, Suite 2

Augusta, GA 30901

Phone: 706-722-4688

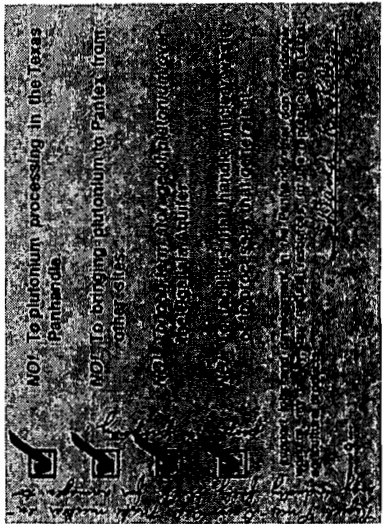
Transcription:

My comment on this question of how can we safely store and dispose of plutonium dismantled from nuclear weapons is that the plutonium would be processed in a safe fashion so that it can be loaded on rockets and sent to the sun for ultimate recycling of it to where it originated and I am recommending that this be considered to be done in a central location such as Savannah River Site in South Carolina so as to have not only an environmental impact but also have a positive effect on downsizing from defense cutbacks, in other words, this would be processed for the entire planet at SRS. It would be shipped from other countries into this location and it could be processed in pellets that would be suitable for launching from rockets and furthermore if necessary it would be worth the consideration of launching these loads from a remote area, an uncivilized area, similar to those areas in the South Pacific that were sites of tests such as Bikini Atoll, and this would avoid the concern over rocket explosions or launch explosions and contamination of the local environment. I can be reached here if you have any further questions. Thank you and have a pleasant day.

1/01.04.00

P-030

KELLEY, DAVID K., AMARILLO, TX
PAGE 1 OF 1

	1/08.03.01
2/08.03.01	3/15.00.00

PC-228

Comment Number 1

08 03 01

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment Number 2

08 03 01

Comment noted.

Comment Number 3

15 00 00

Comment noted.

Stephen L. Kimberley M.D.

Medical - Legal Consultation
8226 Ridgeway Drive
Eugene, Oregon 97405
(541) 242-6628

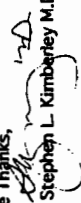
DOE
Department of Fissile Materials Disposition
PO Box 23786
Washington, D.C. 20026-3786

Dear Sirs,

I am writing you in urgent regard to the situation at Hanford Nuclear Reserve. In my opinion as a scientist and physician the situation there represents the greatest threat to biological life on the planet. You do not need to be a scientist to understand that millions of tons of active and eminently explosive nuclear waste stored haphazardly on the banks of one of the largest rivers in the world is a situation that is primed for disaster. I am speaking of the type of disaster that would change life on earth as we know it forever.

I realize that those in your office have been working diligently on this problem for decades and it is not a situation that you personally created. However I am asking you to bear with me as I point out the direction of the only viable solution. I am not some radical that is protesting a nearly impossible situation but rather a scientist trying to shed light on a political and environmental issue of greatest import. Any attempts to control this problem by containment will be obviously temporary. To bury this waste miles beneath the earth could be more harmful than helpful. The only viable method of solution is to neutralize this waste using microorganisms. This technology is rapidly evolving and if it were stimulated and fostered the neutralization process could be started soon.

Please focus on this area of waste neutralization using microorganism technology. Your funds will be much better spent and the public and politicians will be far happier and more accepting of this solution than of those which call for feeble containment at the expense of future generations. Please contact me if you would like to discuss this further. I suggest you work with existing bioremediation companies and researchers for direction.

With Sincere Thanks,

Stephen L. Kimberley M.D.

cc: Ron Wyden US Senate

08 03 01

Comment Number 1

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

14 00 00

Comment Number 2

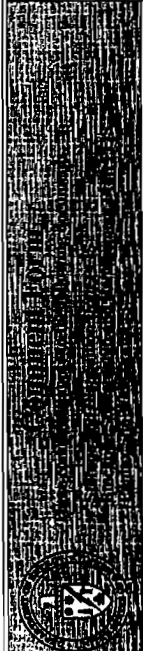
The purpose of the Proposed Action is to convert the surplus weapons-usable Pu into a form that meets the Spent Fuel Standard for proliferation resistance. Existing proven waste forms are sufficient to meet the needs of the Proposed Action. Development of new waste forms is beyond the scope of this PEIS.

1/08.03.01

2/14.00.00

M-044

KING, H. H., AMARILLO, TX
PAGE 1 OF 1

	
NAME (Optional) <u>H. H. KING MRS</u> ADDRESS <u>3904 GATEWOOD DRIVE AMARILLO TX 79109</u> TELEPHONE <u>1809 358-1986</u>	
1) IT WAS STATED DURING THE OVERVIEW OF THE STORAGE AND DISPOSITION PEIS AT THE PUBLIC MEETING THAT NONE OF ALTERNATIVES FOR STORAGE (OR DISPOSITION) WERE UNACCEPTABLE, YET THE TEXT OF THE SUMMARY DOES NOT PRESENT THAT. FROM READING THE SUMMARY (AND MANY, I AM NOT SURE, INDIVIDUALS WILL READ ONLY THE SUMMARY) PANTEX IS DESIGNATED AS THE WORST POSSIBLE LOCATION FOR DOE TO SITE ANY ACTIVITIES BECAUSE OF THE NUMEROUS ADVERSE IMPACTS AT PANTEX FROM THE ALTERNATIVES. THERE NEEDS TO BE SOME DISCUSSION IN THE SUMMARY OF THE MAGNITUDE OF THE PERCEIVED ADVERSE IMPACTS SO THAT A REASONABLE INDIVIDUAL CAN FORM AN INFORMED OPINION OF THE ALTERNATIVES. MANY THING JUST STARTING THAT THERE IS "ADVERSE IMPACT".	109.00.04
2) THERE IS A RANKING OF SITES BY CUMULATIVE ADVERSE IMPACTS IN THE SUMMARY (S-46) BUT NO DISCUSSION OF THE METHODOLOGY OF HOW THE SITES WERE RANKED. PLEASE ADD MORE DISCUSSION ON HOW THIS WAS DONE. WERE SOME ENVIRONMENTAL IMPACTS GIVEN MORE IMPORTANCE THAN OTHERS? WAS THIS DONE USING A POINT SYSTEM? WAS THERE A GRANTED APPROACH? THIS NEEDS TO BE EXPLAINED SO THAT AN INDEPENDENT PERSON COULD EVALUATE YOUR ANALYSIS AND COME TO THE SAME CONCLUSIONS. WHAT ARE THE "RULES" YOU FOLLOWED IN PERFORMING THE ANALYSIS AND COMPARING SITES? MORE EXPLANATION HERE WOULD GIVE YOU MORE CREDIBILITY.	209.00.08

TX-045

09 00 04 Comment Number 1

Based on comments received, the Summary was revised. There was no intention to portray Pantex, the Pantex region, or the Texas Panhandle region in a negative fashion. Each DOE site was analyzed and studied in the same manner and presented in the Draft PEIS accurately per these analyses and studies. All revisions made to the PEIS text are included in the Summary of the Final PEIS.

09 00 08 Comment Number 2

The Department of Energy did not intend to give the perception that the sites were ranked. Based on comments received, the Summary of the Draft PEIS was revised. All revisions made appear in the Summary of the Final PEIS.

April 29, 1996
304 Manor Drive
Savette, GA 30571

U.S. Department of Energy
Office of Fissile Materials Disposition
Washington, D.C. 20026-3786

Statement for the record: Weapons Usable Fissile Material PEIS

I am unable to attend the April 30 PEIS on the disposition of weapon grade Plutonium in Augusta and wish this written statement to be interested into the record in my absence.

First, I oppose any plan to dispose of Plutonium by turning it into MOX fuel. In other words, I oppose burning Pu in a reactor. I oppose reprocessing of any kind because of it sends the wrong message internationally. | 1/08.03.01
| 2/01.00.00

The U.S. is the leader of the free world. We should not deviate from our commitment not to reprocess commercially. I want to point out that this commitment was made by President Jimmy Carter who was trained in nuclear technology, served aboard a nuclear submarine, and was in a better position than any world leader to understand the implications of reprocessing.

Second, I protest the PEIS system itself as it pertains to this decision. By holding these hearings at DOE sites around the country in cities where the public has a strong economic interest in perpetuating DOE related jobs, the outcome is biased. While I applaud the DOE's efforts to establish and support a Citizens Advisory Board and thereby encourage public input, I question its effectiveness in reaching the general public. | 3/08.02.00

I attended the CAB forum in August on April 25 but feel it was slanted toward a preconceived outcome. I also protest the relatively short time allowed for written comment following the PEIS. Seven days (deadline May 7th) is not enough time for the general public to absorb the information and express their concerns. | 4/08.01.00

I am aware of the urgency in this matter, but I am convinced that we must secure all fissile material as best we can without being rushed into long-term solutions that can possibly lead to even greater problems in the future. If we burn fissile Pu in reactors, we have no guarantee that the process will stop there and that we will not continue to depend on MOX as a source of energy.

Our biggest long-term problem is what to do with radioactive waste from reactors in the U.S. and around the world. This problem was not even addressed at the CAB meeting on April 25. I asked this question and so did others I spoke to, but we had to ask in writing and the panel choose not to answer. The MOX option only exacerbates this problem and is a primary reason why it must be opposed. | 5/15.00.00

Sincerely,

Joan O. King

Joan O. King

M-200

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 00 00 Comment Number 2

The specific purpose of DOE's PEIS effort is to evaluate alternatives for the disposition of surplus weapons-usable Pu that would render the Pu as inaccessible and unattractive for reuse in nuclear weapons as the much larger and growing quantity of Pu that exists in spent nuclear fuel from commercial power reactors. This condition is referred to as the Spent Fuel Standard. If an alternative using MOX fuel in reactors is selected, the surplus Pu would eventually be contained in spent fuel and, by definition, the Spent Fuel Standard would be achieved.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort. The fact that the PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not further evaluate reprocessing of the spent fuel, does not foreclose policy or technology options, nor does it prejudice future decisions regarding the management or disposition of the spent fuel.

08 02 00 Comment Number 3

Comment noted.

08 01 00 Comment Number 4

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

KING, JOAN O., SAUTEE, GA
PAGE 2 OF 2

Comment Number 5

15 00 00

Comment noted.

Comment ID: P0033
Date Received: May 1, 1996
Name: Joan King
Address: 304 Manor Drive
Sautee, GA 30571
Phone: 706-878-3459

Transcription:

I am concerned about several things. 1) I can not get to Augusta for the PEIS hearing on the disposal of plutonium, but I am opposed to anything that would jeopardize our position against producing plutonium. That means I don't want to see MOX fuel option used. Classify it if possible. But, I'm also concerned that there isn't enough time for the information to get out. If May 7 is the deadline for written comments, this is not allowing enough time. I know it must be very difficult to get all of this in, but you are asking the public to be informed about something that is tremendously complicated. I would like to see a special panel address this, do it publicly; give the public enough time to become educated and to know what the issues are. This is not something that can be settled in Augusta or near any of the nuclear plants where people are already predisposed towards certain options. I hope somebody will get back to me on this. I will write written comments. Thank you. Bye.

1/08.03.01
2/08.03.01
3/08.01.00
4/08.01.00

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 01 00 Comment Number 3

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

08 01 00 Comment Number 4

Comment noted.

P-033

KLEINAU, S. K., ET AL., KEMBLE, ON
PAGE 1 OF 8

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input. This will include an appropriate level of analysis by Canada before any decision on burning Pu in a CANDU reactor is implemented.

=== COVER PAGE ===

TO: U.S. DEPARTMENT OF ENERGY OFFICE OF FISSILE MATERIALS DISPOSITION
202-586-5770
WASHINGTON, DC

FROM: S. K. KLEINAU
519-795-7725
TEL: 519-795-7725

U.S.A.

3-4 PAGE(S) TO FOLLOW

1/08.03.01

PLEASE BE KIND ENOUGH TO TAKE THE OPPOSITION TO THE IMPORT OF WEAPONS-GRADE PLUTONIUM, EVEN IN THE SMALLEST AMOUNT, OF THE FOLLOWING 35 PERSONS LIVING IN THE VICINITY OF THE BRUCE 'A' REACTORS INTO CONSIDERATION WHEN CONTEMPLATING A METHOD OF DISPOSAL FOR NUCLEAR WAR HEADS.

AN ACKNOWLEDGEMENT OF OUR SUBMISSION (PETITION) WOULD BE MUCH APPRECIATED AND SHOULD BE DIRECTED TO:

S. K. KLEINAU
R.R. 4, LION'S HEAD, ONTARIO, CANADA
N0H 1W0

Thank you very much indeed,
S. K. KLEINAU
P.S. ORIGINALS WILL BE FORN BY MAIL.

M-287

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

U.S. Department of Energy,
Office of Plutonium Materials Disposition,
P.O. Box 23786,
Washington, D. C. 20026-2786, U.S.A.
May 4, 1996
Re: Storage and Disposition of Weapons-Usable Plutonium
Materials Draft Programmatic Environmental Impact Statement.
As the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.
We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).
1/08.03.01
cont.
2/08.03.01

Sincerely,
Stephen K. Kleinau
R.R. 4, Lion's Head, Ontario
N0K 1W0 CANADA
Marcella Kopf
General delivery
TOBERMORY, ONTARIO
N0M 2R0
Sandra Pollack
R.R. 1
Lion's Head, Ont N0K 1W0
Jason Dyball
P.O. Box 977
Lions Head
Ontario
N0K 1W0
Tom Head
R.R. 1, Lion's Head, Ont.
N0K 1W0

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KLEINAU, S. K., ET AL., KEMBLE, ON
PAGE 3 OF 8

U.S. Department of Energy,
Office of Fissile Materials Disposition,
P.O. Box 23786,
Washington, D. C. 20026-3786, U.S.A.

By Facsimile 202-536-2710 May 4, 1996

Re: Storage and Disposition of Weapons-Usable Fissile
Materials Draft Programmatic Environmental Impact Statement.

As the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.

We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).

Sincerely,

Dr. Billy Stanley
RRI Kemble ON
NOH 150

Gene Fraser
Ignace ON NOH 150

Joseph Osborne
Justin Osborne

HANS ALBARD
RRI Kemble ONT
NOH 150
Robert Hall
Tina's Head
Ont

Winds Head ONT NOH 150
" " " "

Ryan Higgs LIONS Head ONT

M-287

[illegible]

KLEINAU, S. K., ET AL., KEMBLE, ON
PAGE 5 OF 8

U.S. Department of Energy,
Office of Fissile Materials Disposition,
P.O. Box 23786,
Washington, D. C. 20026-3786, U.S.A.

By Facsimile 202-586-2710 May 4, 1996

Re: Storage and Disposition of Weapons-Usable Fissile
Materials Draft Programmatic Environmental Impact Statement.

As the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.

We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).

Sincerely,

Eric Dickson
RR1
Sebringville, Ont.
N0H 1W0

Shirley Dickson
P.O. Box 957
Sebringville, Ontario
N0H 1W0

Tom McQuarrie
1 Lucknow, ON
RR #1
N0G 2H0

Sandra-Jean O'Hart
642 Castleguard Cr.
Castleguard, Ont. L7M 2M6
Sandra-Jean O'Hart

Russ O'Hart
642 Castleguard Cr.
Castleguard, Ont.
L7M 2M6

Jim Kvehlman
61 Beachview Cr.
Toronto M4E 2H6

M-287

KLEINAU, S. K., ET AL., KEMBLE, ON
PAGE 6 OF 8

U.S. Department of Energy,
Office of Missile Materials Disposition,
P.O. Box 27786,
Washington, D. C. 20036-3786, U.S.A.

By Facsimile 202-596-2710 May 4, 1996

Re: Storage and Disposition of Weapons-Usable Plutonium
Materials Draft Programmatic Environmental Impact Statement.

We, the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.

We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).

Sincerely,

PAUL M.L. REUBER FERGUSON ON N0H 270

Paul Reuber

Paul Reuber R.R. 3 Lewis Road N0H 1M 0

John D. Gault 450 Main St. W. L1STONEL ONT M4W 1R6

T.L. Kinnis Bx 116 Collingwood ON L9Y 3Z4

Mike Nickerson Box 374 Merrickville, ON. K0G 1N0

Paul Bravante

Paul Bravante 1-55 Crook St. Hesp. Ont. L8R 2E7

Canadian Council REPT/Programs, N.S. B2G 2L4

N. Ahmed 95 Main St. W. E5 L8S 4A5

Kelly Goff 55 Robinson St. J. Lindsay, Ont. K9V 2S7

John D. Gault 17 Major St., Kitchener, Ont. N2H 4R2

June Koda Box 418 Unbridge ON L9P 1M8

M-287

KLEIN, S. K., ET AL., KEMBLE, ON
PAGE 7 OF 8

U.S. Department of Energy,
Office of Fissile Materials Disposition,
P.O. Box 2786,
Washington, D. C. 20026-3786, U.S.A.

By Facsimile 202-556-2710 May 4, 1996

Re: Storage and Disposition of Weapons-Usable Fissile
Materials Draft Programmatic Environmental Impact Statement.

As the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.

We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).

Sincerely,

Stefan Odman *Stefan Odman* 200 Colville Trail B.C. V5E 6E1
Eddy Kulla 1544 King St. West (Brent) Toronto, Ont M6K 1J6.
Eva-Sofia 76 Armstrong St. Ottawa Ont. K1Y 2V7
Cathie Pym C. Pym 385 John Ave. Burlington, Ont. L7R 2R7
Janet Lynn 385 John Ave. Burlington, Ont. L7R 2R7
Jeff Pym 385 John Ave. Burlington, Ont. L7R 2R7
Randy Kells 86 Scott St. A.Y. V. N0B 3E0
Christoph Gleding 24 Queen St. Burlington RR #4 Burlington, Ont. N0B 3E2
Edith Thompson 705-430 Williams St. Burlington, Ont. N0B 3E2
M. N. W. 65-1111 St. Clair St. Burlington, Ont. N0B 3E2
Norman Alcock 1111 St. Clair St. Burlington, Ont. N0B 3E2
John Blaker 3044 Queen St. West, Ont. N0M 1W0
John Blaker 3044 Queen St. West, Ont. N0M 1W0
John Blaker 3044 Queen St. West, Ont. N0M 1W0
John Blaker 3044 Queen St. West, Ont. N0M 1W0

M-287

KLEINAU, S. K., ET AL., KEMBLE, ON
PAGE 8 OF 8

U.S. Department of Energy,
Office of Missile Materials Disposition,
P.O. Box 23786,
Washington, D. C. 20026-3786, U.S.A.

By Facsimile 202-536-2710 May 4, 1996

Re: Storage and Disposition of Weapons-Usable Plutonium
Materials Draft Programmatic Environmental Impact Statement.

As the undersigned, citizens of Ontario, are strongly
opposed to the import of weapons-grade plutonium for use as
fuel in CANDU reactors.
We want to prevent exposing millions of residents
along shipping routes to this deadly material and suggest it be
burned or disposed of at point of origin (manufacture).

Sincerely,

Leslie Tompkins P.O. Box 193, Limerick Road, Ontario N0M 1N0
Robt. Brown RR 41 Limerick Road, Ont. N0H 1N0
Carol Cleveland RR 2, Plover Road Ont N0H 1W0
Margaret C. Wheeler Box 96 Wallace town Nov 2 MO.

M-287

KLINE, CONNIE, WILLOUGHBY HILLS, OH
PAGE 1 OF 1

Date Received: 06/12/96
Comment ID: P0052
Name: Connie Kline
Address: 38531 Dodds Landing Drive
Wilmington Hills, Ohio 44094

Transcription:

Yes, my name is Connie Kline. Phone and fax are (216) 946-9012. Another dedicated fax line is (216) 663-4177. I have very little information on this proposed DOE plan to use fissile materials apparently in commercial reactors. I would like if possible, if there is something fairly short, that could be faxed to either of those numbers that I gave or, my address is 38531 Dodds Landing Drive, Willoughby Hills, Ohio 44094. As it stands now, what I have read about the Programmatic Environmental Impact Statement regarding this fissile material being used in commercial reactors, I am opposed to it based on what I have read so far. But I certainly would be very interested in receiving either by fax or by mail some additional information as I have been able to get my hands on very little information about this. Thank you.

1/08.03.01
2/08.02.00

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 02 00 Comment Number 2

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.

P-052

KNIGHT, STACY
PAGE 1 OF 1

STACY KNIGHT

I strongly support the continuation of the high explosive function at the Pantex facility. I oppose any effort to move these functions to the national labs. Pantex is the most cost effective DOE facility and has an excellent track record in doing the high explosive functions.

- I believe that Pantex should be chosen as the location for fissile materials storage and disposition functions. Pantex already stores surplus plutonium and has a safety and security record that is unmatched in the DOE complex. When given fair budget consideration, strong local support and national security interest, Pantex is the ideal choice for this function of fissile materials storage and disposition.

1/08.03.01

QUESTIONS:

- Please explain why the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory stockpile management budgets show projected increases from 1996 to 2004, since the U.S. has terminated development of nuclear weapons.
- Are these projected increases in the stockpile management at the two labs based on transferring of missions to them which have previously been done at the production plants?

TX-047

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

KOEBERL, DWIGHT D., SEATTLE, WA
PAGE 1 OF 1

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional): Dwight D. Koerber
Address (optional): Seattle, WA 98117

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23746
Washington, D.C. 20026-3786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, bonded zeolites, or ceramics.

This option seems preferable, because it allows disposal of plutonium in an unusable form. Disposal in a form not suitable for weapons use is the best option.

1/08.03.01

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

1/08.03.01
cont.

Only preferable if immobilized first.

3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.

2/08.03.01

Very objectionable because of the wastes generated.

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.

3/01.02.00

The wastes should be made in separate for use in bombs.

M-223

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 02 00 Comment Number 3

The Department of Energy's proposed storage action includes nonsurplus weapons-usable fissile materials to support national defense and surplus Pu pending disposition. The surplus Pu would ultimately be converted into a form that would make it difficult to extract and reuse to make weapons.

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional): Michael Korth
Address (optional): 1534 S. 21st St.

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of a public comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Public Comment
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 7, 1994.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a fourth option, immobilization, which would result in long-term storage of the materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.

OK

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

Not this option - expensive to dispose on a long term basis

3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.

The expense is very low with and

but it must be done

at least to meet the plan for 25th year

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.

OK

1/08.03.01

2/08.03.01

M-230

08 03 01 Comment Number 1

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

KORTH, MICHAEL, WEST RICHLAND, WA
PAGE 2 OF 2

Please use this space to write down any additional comments on the Storage and Disposition
of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement.

Slip up 250 K gms
after in a non-sustainable schedule
(Costs are 24,000 Entegrid only)
every other slip per
saying common (customer goods) plan
and
costs in dollars for slip, other
above production

3/08.03.01

4/07.00.00

M-230

08 03 01

Comment Number 3

The Department of Energy acknowledges the commentor's opposition to long-term storage. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

07 00 00

Comment Number 4

Cost data, along with technical and schedule data, was provided in a Technical Summary Report for storage in late July 1996.

LABORDE, MRS. LEO, AMARILLO, TX
PAGE 1 OF 1

08 03 01

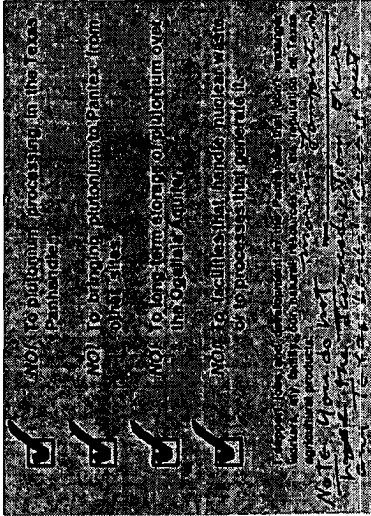
Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Dear LEO E. :
April 3, 1996
Please don't increase storage of plutonium at Pantex — or do anything else that will further spoil our area. The general public is against any continuation or expansion of nuclear contamination. Don't listen to the local greedy businessmen who will destroy the Pantex area of Texas for money. They don't speak for the majority.
Mrs. Leo Laborde

1/08.03.01

PC-002

	1/08.03.01
2/08.03.01	3/09.01.04

PC-182

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01

Comment Number 2

Comment noted.

09 01 04

Comment Number 3

Pantex was originally built for the U.S. Army during the early days of World War II with the mission of producing conventional munitions. After the war, the facilities were deactivated and lay vacant until 1949 when Texas Technological College (now Texas Tech University) purchased the site for \$1.00. In 1951, the AEC (predecessor of DOE) asked the Army to reclaim the main plant and surrounding land under the recapture clause of the sale agreement, and the land area was subsequently transferred to the AEC.

Pantex operational activities are presently situated within 6,030 ha (14,900 acres) of land, of which approximately 3,683 ha (9,100 acres) are owned by the Federal Government and the remaining 2,347 ha (5,800 acres) are leased from Texas Tech University primarily to provide a safety and security buffer zone. All owned and leased buildings on the site are administered, managed, and controlled by DOE. DOE owns an additional remote tract of 436 ha (1,077 acres) of undeveloped land at Pantex Lake located approximately 4 km (2.5 mi) northeast of the main plant site. This property is held by DOE to retain the water rights. Total Pantex land area equals 6,466 ha (15,977 acres). The potential location of all storage and disposition alternatives at Pantex would be situated on land area owned by the Federal Government.

LANCASTER, COLLEEN, BRENTWOOD, TN
PAGE 1 OF 1

June 6, 1996

U.S. Department of Energy
Office of Fissile Materials
Forrestal Building
1000 Independence Ave., S.W.
Washington, D.C. 20585

Dear Department of Energy,

Thank-you for allowing me to comment on the Storage and Disposition of Weapons-Usable Fissile Materials Draft Environmental Impact Statement.
My preferred alternative for long-term storage is:

Consolidate all Pu material at the Site Using Upgraded and/or New Facility; HED Remains at ORR.
My preferred alternative for plutonium disposition is:
Immobilization by Electrometallurgical Treatment.
Thank-you once again.

Sincerely,

Colleen Lancaster

801 Davis Dr.
Brentwood, TN 37027

1/08.03.01

2/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support for the Consolidation Alternative. Decisions on the storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01

Comment Number 2

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

F-048

LANGER, SIDNEY, SAN DIEGO, CA
PAGE 1 OF 2

01 03 00 Comment Number 1

The PEIS analyzes the environmental impacts for storage of weapons-usable Pu and HEU from the U.S. weapons stockpile, disposition of Pu declared surplus to national defense needs. U.S. civilian materials and the materials of other nations, whether civilian or military, are not within the scope of the PEIS. The PEIS is not a U.S. or international policy-making document. However, by completing environmental analyses and related cost, schedule, technical, and nonproliferation analyses that will be used to reach a ROD, the United States will be in a position to implement Pu disposition efforts multilaterally or bilaterally through negotiations, or unilaterally as an example to Russia and other nations.



May 06, 1996

Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23706
Washington, DC 20026-3706

Dear Sirs:

I believe there is a serious omission in the Draft Programmatic Environmental Impact Statement on the Storage and Disposition of Weapons-Usable Fissile Materials (Storage and Disposition PEIS). I have reviewed the three volumes and Summary documents of the PEIS and find no discussion of an important consideration in evaluating the various options:

The plans of other nuclear power nations for disposition of their civil and weapons-grade plutonium.

It makes no sense for the United States to adopt a preferred option in isolation from the world community. While such a selection may well be the safest, most environmentally benign, and most cost-effective method for the United States to dispose of its own excess weapons plutonium, the potential adverse global impacts of plutonium availability may be enhanced by the U.S. selection of an option which differs from the selections of most other nations.

As an example of how U.S. policy can adversely impact global issues, consider the question of nuclear fuel reprocessing. It could easily be argued that world-wide availability of civil (and perhaps all) plutonium would be under far better international controls than it is today if the U.S. had joined with other nations twenty years ago in developing mechanisms for controlling and using plutonium for beneficial purposes. Instead we developed our policy in myopic isolation with high moral purposes, convinced that if we led the way others would follow. Now we turn around to discover that we are alone! Other nations that reprocess low-enriched uranium fuels are beginning to utilize the bred plutonium and are solving, in-part, the waste disposal problem. We have done neither! We are neither a leader nor a follower; we are just in the way!

The PEIS should discuss how the U.S., in conjunction with other nuclear nations, can develop and implement a universal policy for utilization and control of all plutonium, both military and civil. This discussion should be an

1/01.03.00

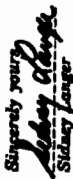
1/01.03.00
cont.

F-013

LANGER, SIDNEY, SAN DIEGO, CA
PAGE 2 OF 2

integral part of the discussions in Chapter I. An adverse impact that needs to be considered is whether a U.S. policy designed solely to increase the future global availability of platinum for superior purposes. It appears to me that such a primary decision is a prerequisite to consideration of the technical proposals for disposition.

Thank you for the opportunity to comment on the Draft PEIS.

Sincerely yours,

Sidney Langer

1/01.03.00
cont.

F-013

Plutonium Disposition EIS: General Comments

by W. F. Lawless

The disposition of plutonium is a complex decision for all Americans because of the uncertainties derived from plutonium's very long 24,000 year half-life. Other factors add to this complexity:

1. The uncertain threat of global warming from the burning of hydrocarbon fuels (e.g., coal, natural gas, gasoline, fuel oil, etc.).
2. The uncertainty of environmental effects from wind, solar, and hydroelectric power.
3. The uncertainty of the proliferation of weapons material from commercial reactors that generate electricity with plutonium fuels in Russia, Japan, and Europe.

To moderate the threats from proliferation, the U.S. has decided to dispose of its approximately 50 MT of excess weapons grade plutonium in one of three forms: in deep bore holes, contaminating it with fission products, and burning it up in reactors. The first option is an unattractive safeguard against proliferation, the second option recovers no energy, and the last option recovers a minor amount of energy as it passes once-through commercial reactors. The last two options comply with the spent fuel standard, i.e., they are as resistant to proliferation as the 1000 MT of spent fuel now scheduled for disposal at Yucca Mountain. But there are uncertainties with the spent fuel standard.

4. The uncertainty of safeguarding the plutonium after the fission products have decayed; the uncertainty of heat damage to Yucca Mountain during the first few hundred years; and the

SR-008

14 00 00 Comment Number 1

Comment noted. Reprocessing is not an option, as stated in the President's Nonproliferation and Export Control Policy.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort. The PEIS evaluates disposition of surplus weapons Pu through MOX fuel but does not propose or further evaluate reprocessing of the spent fuel. The PEIS does not prejudice future decisions regarding the management or disposition of the spent fuel.

uncertainty from the radioactivity of plutonium and from the possibility of critically events during the next 1,000,000 years at Yucca Mountain .

In contrast to the spent fuel standard, however, the SRS vitrified high level waste will be dangerous only during the time required for the decay of its fission products.

Mindful of the above facts, the options in the EIS overlook an environmentally better option. Before U-235 is used to produce electricity in the U.S., it is diluted with U-238, but U-238 exposed to U-235 creates plutonium. Thus, plutonium is a key ingredient of spent fuel. Even in the plutonium-disposition option three noted above, plutonium will be diluted with U-238 to create more plutonium as it burns up (NAS, p. 143n). Because of the uncertainties, DOE should include a fourth option.

5. The fourth option is to demonstrate the recovery and extraction of plutonium from excess weapons material and from spent mox fuel made from the excess weapons plutonium, to dilute it with non-fertile material instead of U-238 (e.g., Th-232 would generate fissile U-233; an aluminum or silicone mixture would not generate a fissile end-product), and to burn the plutonium in commercial reactors. The end result would be an environmentally safer standard for disposal at Yucca Mountain that could become known as the vitrified high-level waste standard. It would not only remove the threat of plutonium from the biosphere, but it would also reduce environmental threats (e.g., global warming, the mining of uranium, or the heat stresses at Yucca Mountain), recover the maximum amount of energy available from plutonium, and not generate new plutonium.

1/14.00.00

SR-008

Specific Comments

1. Even if free, plutonium fuel relative to uranium fuel in a LWR is expensive (NAS, 1994, p. 24-5) and will require a subsidy (p. 164). Pu fuels are more economic for new advanced reactor concepts (for LMR's, see pp. 182, 186; for ALMR's, see p. 185). Fuel costs will be offset by the recovery of energy, utility repository subsidies, and the reduction of safeguard concerns (in WSRG, 1996).

2. A. Makhijani: "The United States is the only leading country that has wisely rejected the use of civilian plutonium because of its proliferation dangers and its high costs. It is therefore the only country that is in a position to exercise the leadership to persuade other countries to forgo civilian plutonium production, at least for the time being, and to put all separated plutonium into non-weapons-usable form." (Report, 1995, p. 15)

M. Lawrence: "Plutonium can be made into power reactor fuel and burned up in a reactor. Ample experience exists in the fabrication and use of mixed oxide fuels containing plutonium. While the economics of using mixed fuels are not considered favorable, at least by the U.S. and especially in the near term, several countries use or plan to recycle plutonium as a matter of strategic national policy." (Report, 1995, p. 31)

N. Egorov, Russia Federation on Atomic Energy: "I would say that we, in both countries, have paid too high a price sometime ago to generate and create that material and that is why we must choose the most efficient way of disposition of this material. That is why the general position of the Russian Federation in terms of plutonium disposition is that we should use, in the longer-term, that material as a component of the mixed oxide fuel for commercial power plants." (Report, 1995)

LAWLESS, W. F.
PAGE 4 OF 7

Currently, seventeen European and two Japanese commercial reactors burn plutonium MOX fuels (NAS, 1994, p. 186). By the year 2000, more are planned for Europe, Japan, and Russia.

3. U-235/U-233 plus U-238 produces plutonium (NAS, 1994, p. 205). Non-fertile fuels do not contain U-238 (NAS, p. 156).

4. Plutonium stocks, from the burning of U-235/U-238 in commercial reactor fuels, are increasing at about 60-70 MT per year (NAS, 1994, p. 28).

5. Low quality weapons grade (WG) plutonium and reactor grade (RG) plutonium are both explosive (NAS, 1994, p. 32-33).

6. Plutonium is difficult to handle because it is radioactive and toxic (NAS, 1994, p. 68).

7. Americium content is higher in RG rather than WG plutonium (NAS, 1994, p. 121-2).

8. Spent fuel rods destined for the repository are contaminated with fission products and plutonium. This spent fuel standard is safe from proliferation for the first few hundred years, however, as the fission products decay, proliferation risks increase proportionately (NAS, 1994, p. 151; p. 191; the spent fuel standard is described on p. 143).

9. "Options for near-total elimination of plutonium may have a role to play in the longer-term effort to reduce the risks posed by global plutonium stocks." (NAS, 1994, p. 143)

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10. "Institutional issues in managing plutonium disposition may be more complex and difficult to resolve than the technical ones. The process must be carefully managed to provide adequate safeguards, security, transparency, and protection for environment, safety, and health; to obtain public and institutional approval, including licenses; and to allow adequate participation in the decision making by all affected parties, including the U.S. and Russian publics and the international community." (NAS, 1994, p. 144)

11. "...as long as civilian plutonium exists and continues to accumulate, options that went further than the spent fuel standard and sought to eliminate the excess weapons plutonium entirely would provide little additional security, unless the same were done with the much larger amount of civilian plutonium." (NAS, 1994, p. 148; p. 155)

12. U.S. policy under President Clinton: "On September 27, 1993, the Clinton administration announced a nonproliferation initiative that makes clear that, while the United States will not interfere with reprocessing in Japan and Europe, "the United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes." (NAS, 1994, p. 149)

13. Greater than 100 years may be necessary to destroy existing plutonium stocks (NAS, 1996, p. 209-219). The Academy does not recommend plutonium fuels (NAS, p. 221), but does recommend additional research on their use (NAS, p. 222), including high plutonium loadings to reduce the production of plutonium (NAS, p. 211). The NRC's Separations Technology and Transmutation Systems (STATS) is studying the burning of all actinides (NAS, p. 210).

LAWLESS, W. F.
PAGE 6 OF 7

14. The estimate by SRS to reprocess 40,000 MTHM of commercial spent fuel at SRS and dispose of the remains in a repository is about \$8.6 billion versus \$11.3 billion for dry disposal in the repository; the total costs for spent fuel, excess weapon materials, and spent Naval fuels is \$15.5 billion to reprocess and dispose versus \$28.8 billion to only dispose (WSRC, 1996). By comparison, T. Pigford estimates a cost of about \$100 billion to reprocess 630 MTHM (telephone call, April 1, 1996; he figured \$800-\$2,000 per kg of heavy metal to reprocess, \$1,200 per kg to fabricate, and \$400 per kg to recover energy; see also the Academy "STATS" report). Including reprocessing and fabrication fuel costs, Eichholz (1985) estimated that U-235/plutonium fuels were competitive with coal and oil-fired utilities in 1981 (p. 627).

15. The age of the facilities at SRS, and the radioactive releases from them, have been raised as issues if spent fuels are to be reprocessed at SRS. The separations canyons at SRS are more than 40 years old, however, their equipment has been upgraded and is functional.

These issues regarding the canyons can be related to other man-made structures. The Eiffel Tower, the Douglas DC-3 aircraft, and the Empire State Building are all older than the SRS canyons. Technology is not necessarily dated by its age; the Titanic, which sunk on its maiden voyage, is a good example. When the Empire State Building opened in 1931, the life-span of the average American was around 47. In 1988, according to the U.S. Bureau of the Census, the average life-span of Americans had increased to about 75. During this period, at the rate of about 2 million visitors annually, 75 million visitors had toured the Empire State Building. If each visitor toured the Empire State Building within about one hour, because some tall concrete buildings are radioactive at about 5 μ rad per hour (Eichholz, 1985, p. 108), the collective annual radioactive dose from the Empire State Building would be much greater than the dose to the population exposed to reprocessing releases from SRS.

SR-008

References

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- Report. (1995). *Plutonium Roundtable: Risks and solutions. A public education project on policy choices for nuclear weapons disposal*.
- Westinghouse Savannah River Company (WSRC). (1996). *Chemical stabilization of defense related and commercial spent fuel at the Savannah River Site*. Document No. NMP-PLS-950239.
- U.S. Department of Energy (DOE). (1996, February). *Storage and disposition of weapons-usable fissile materials draft programmatic environmental impact statement*. Summary. Washington, DC: Office of Fissile Materials Disposition.

SR-008

LEAGUE OF WOMEN VOTERS, COLUMBIA, SC,
MARY T. KELLY
PAGE 1 OF 2

June 6, 1996

FROM: Mary T. Kelly, Natural Resources Specialist
League of Women Voters of South Carolina
4018 Sandwood Drive
Columbia, S.C. 29206
(803) 782-4410

TO: Department of Energy
Office of Yucca Materials Disposition
c/o SAIC-FEIS
P.O. Box 23786
Washington, D.C. 20026-3786

RE: Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement dated February 1996

The League of Women Voters of South Carolina appreciates the opportunity to comment on this EIS. As residents of the state that is home to the Savannah River Site we have a major stake in the outcome of the decisions you are trying to formalize. We also appreciate the extension of the time for commenting on this most important EIS and for the efforts that have been made to educate the public on the issues involved. However, we regret that important educational efforts such as the Plutonium Forum held in N. Augusta were not done in a more timely manner and did not stress rather than minimize - aside from bomb making potential - the dangers inherent in plutonium. To mention just one point, never once was the term critically used or defined.

In general we endorse the recommendations of the National Academy of Science although with serious reservations about the use of MOX fuel and the openness to possible deep bore hole disposal. Deep bore holes at SRS should only be done, if at all, based on new geologic studies and attention to possible earthquakes.

LWVSC joins with the League of Women Voters of Hilton Head Island and Dr. David Jordan in pointing out the serious dangers of inhalation from plutonium oxide and the problems inherent in creating new wastes during the process of fuel manufacture. Reprocessing the spent fuel rods would magnify the waste burden. As you well know, water soluble reprocessing waste has been a major danger and source of contamination at both Hanford and at SRS. It is only beginning to be addressed through use of the Defense Waste Processing Facility at SRS. Total confidence in the operation of that facility has yet to be achieved.

08 02 00 Comment Number 1

Comment noted.

08 03 01 Comment Number 2

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 11 08 Comment Number 3

The potential human health impacts from the proposed Pu storage and disposition alternatives are evaluated and presented in this PEIS for facility normal operation and anticipated accidents. The analysis considered all major potential exposure pathways including the inhalation of Pu oxide emitted from the facilities.

1/08.02.00

The manufacture of MOX fuel assemblies would create TRU and a minimal amount of mixed TRU wastes as described in Section 4.3.5.1.10. This waste would be treated and packaged in either a facility constructed with the MOX fuel fabrication plant or in an expanded central facility. The waste would be staged in storage facilities until it would be shipped to a Waste Isolation Pilot Plant (WIPP) for disposal, depending on whether DOE decides to operate the WIPP. While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort.

2/08.03.01

3/09.11.08

M-264

LEAGUE OF WOMEN VOTERS, COLUMBIA, SC,
MARY T. KELLY
PAGE 2 OF 2

We would like to stress the following points:

"The MOX fuel option - This was made to sound simple at the N. Augusta forum when in fact it is not. The down side of this needs to be clearly laid out for the public to understand. It should not be driven by utility or jobs pressure. To quote Dr. Jordan's statement "...burning MOX fuel looks like a post-hoc program for electric utilities." As pointed out in the NAS report, with the passage of time, spent fuel rods cool radioactively and can be more safely handled by a future generation of rogue nations or terrorists bent on recovering plutonium.

"The Department of Energy should stop the hand sell its processing programs on the basis of jobs creation, a potent weapon in getting the people and political structure of South Carolina to accept things that may not be in their or the nation's best interest. Your decisions should be based on hard scientific evaluations, in the overall interests of national security and the goal of non-proliferation. It is particularly disturbing to read in THE STATE of June 6 that Secretary Grumley himself told a group of South Carolina and Georgia lawmakers that if all the proposed missions came to South Carolina, employment could grow to 19,000 by the year 2002. As you are well aware the Yucca Mountain site has run into major citizen opposition. It is highly likely that other states will have similar reservations about accepting proposed new missions. Said to say, major decisions re our nuclear future are viewed by too many politicians and SES workers and contractors as just one more form of economic development.

We wish you well as you wade with these necessary decisions which we agree, need to be made and implemented expeditiously. However, we hope that in so doing clean up and environmental remediation do not take a back seat.

4/06.00.08

5/01.06.00

6/11.00.06

06 00 08 Comment Number 4

Whereas it is true that the radioactivity does decay with time, the process is relatively slow, progressing with an approximately 30-yr half-life. If terrorists, or others could get access to the Pu in spent fuel, recovery of that Pu from spent fuel is a non-trivial challenge, even after the radiation field has decayed somewhat. Pu in spent fuel is not directly weapons-usable. To make it weapons-usable requires extracting the Pu from the spent fuel which is expensive and technologically complex. Once the surplus Pu is rendered to the Spent Fuel Standard it is no more attractive or useful than the Pu in already existing quantities of spent fuel.

01 06 00 Comment Number 5

The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action or negotiate reciprocal actions with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD. The documents related to technical, cost, and schedule analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the Nonproliferation Policy as it relates to the Proposed Action and alternatives.

11 00 06 Comment Number 6

Comment noted. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

M-264

LEAGUE OF WOMEN VOTERS, HILTON HEAD ISLAND, SC,
PATRICIA TOUSIGNANT
PAGE 1 OF 5

LWW LEAGUE OF WOMEN VOTERS
HILTON HEAD ISLAND, S.C.

FROM: Patricia Tousignant, President
League of Women Voters of Hilton Head Island, SC
4 Deerfield Road
Hilton Head Island, South Carolina 29926
(803) 681-7718

TO: Department of Energy
Office of Fissile Materials Disposition
c/o SAIC - 7213
P.O. Box 23786
Washington, D.C. 20026-3786

RE: Weapons-Grade Plutonium Disposal
Plutonium Disposition Educational Forum
April 25, 1998
North Augusta Community Center, SC

Attached is a statement and newspaper article prepared by Dr. David Jordan for the League of Women Voters of Hilton Head Island, SC on the Disposal of Weapons-Grade Plutonium. Dr. Jordan attended this forum as our representative and prepared the following comments after studying the Fissile Materials Disposition Overview materials. The League of Women Voters submit this paper as our statement on this vital and sensitive issue. Dr. Jordan is a Chemistry Professor during the summer months at Potsdam College of the State of New York and resides the balance of the year in Hilton Head Island, South Carolina. His addresses and phone numbers are:

David Jordan, Ph.D.
Professor SUNY - Potsdam Collins
Department of Chemistry
372 Outer Main Street
Potsdam, NY 13676
(315) 265-5664
(Until mid-October)

Res: 53 North PortRoyal Drive
Hilton Head Island
SC 29926
(803) 681-5664

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Hilton Head News
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Elaine Allen / Sen. Cork

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PATRICIA TOUSIGNANT
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WEAPONS-GRADE PLUTONIUM DISPOSAL Store it or Convert it to an Unattractive Hazardous Material through Using it as Fuel?

Government agencies and organizations such as the National Academy of Science have considered over thirty options for managing excess weapons-grade plutonium, arising from the dismantling of nuclear warheads. The Plutonium Disposition Educational Forum held in North Augusta on April 25 discussed two of these options.

Very pure metallic plutonium (Pu), containing a high percentage of the 239-isotope, for use in a bomb is a finely machined sphere roughly the size of a billiard ball. Some panelists emphasized the point that Pu-239 was not much of a health hazard, because it emits only alpha particles, which cannot penetrate far into tissue.

Furthermore, the emission rate of these particles is slow, since particle emission by half of the plutonium atoms takes approximately 25,000 years. External contact with plutonium limits the radiation effects to the body surface.

However, health hazards become greater if the Pu metal is converted to its oxide, for the oxide can form dust particles, which may enter the lung cavities. Plutonium oxide in the lungs increases ones risk for the development of lung cancer, because the emitted alpha particles will continually affect the closely surrounding tissue. The risk of a cancer is a function of the dose of plutonium inhaled.

Never mentioned at the forum is the fact that nitrate salts, which are produced during reprocessing of plutonium metal or the oxide, are water-soluble, so if by accident or storage tank corrosion these salts enter the public water supply, concentration of plutonium at other parts within the body is possible. At the end of 1994, the Savannah River Site was storing 126,300 cubic meters of highly radioactive solutions derived from reprocessing. Only in 1996 has treatment of these solutions begun. In 1960 the Savannah River site had a leak of 100 gallons of high-level radioactive waste into the ground water. The storage tanks at Hanford, Washington, a facility similar to the Savannah River Site have been leaking continuously since 1956, and have released over 750,000 gallons of liquid waste into the ground; it has been detected in test wells.

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Reportedly there is a warehouse in Russia where twelve-thousand thermos bottles of Pu materials are stored; the contents of just three would be sufficient to make a bomb. The security supervision of this Pu is eroding. Sufficient Pu-239 to construct a bomb could be smuggled out hidden in a worker's clothing. Forum speakers conveyed a sense of urgency that international agreements for the strict control of plutonium materials should be arranged soon.

The Department of Energy has narrowed the disposal options to three: 1) usage as a fuel in nuclear reactors, 2) placement into deep dry boreholes or mines (geologic disposal), and 3) immobilization in glass or ceramic with secure storage. The latter two could be combined. Forum speakers generally voiced opinions consistent with what one would expect from the companies or agencies that they represented: oxide reproducers and nuclear power plant service employees favored the first option. There was wide agreement that there will be a large monetary cost for disposal of plutonium, no matter what the method.

The fuel option uses plutonium oxide mixed with uranium oxide (called a MOX fuel) in a nuclear reactor. Nuclear power plants now fission uranium oxide, and if properly modified, could fission MOX to generate electricity. Using plutonium oxide alone would be rather hazardous because it is more difficult to keep the fission process under control than it is with MOX or uranium oxide alone.

The majority of panelists supported the MOX fuel option and argued that in the foreseeable future there will be an insatiable need for energy, which nuclear fuel can partly supply, thus preserving petroleum for other purposes. The Russians, in fact, regard their plutonium stocks as a "National Treasure", and will not readily dispose of it. Storing weapons-grade plutonium in this country in a way which would make it easily retrievable would not seem to the Russians and others to be good-faith disposal, and the overriding concern is to quickly come to agreements to stop the proliferation. Very importantly, spent reactor fuel is so much more radioactive and hazardous than unspent fuel that only nations with highly sophisticated technology will be able to process it for further disposition, thereby eliminating the threat of its acquisition by rogue parties.

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On the other hand, immobilization advocates argue that MOX fuel is cheaply available (as is solar energy) but expensive to utilize. A MOX industry will perpetuate the supply of Pu because it can be reprocessed, and it is the continued vulnerability to theft and wider dispersal of this supply that is the issue of greatest concern. There are few reactors in the US (more in Europe) that are presently suitable to burn MOX. Modification of existing reactors will require substantial capital investment.

Although immobilization of wastes is not yet a highly developed technology, glass is durable and environmentally acceptable and glass technology is well established. Geologic disposition is stalled partly due to political opposition and the tedious pace of federal governmental action. It seems that these methods could be available much earlier if an appropriate sense of urgency existed. If immobilization ensures that highly-radioactive wastes are included in the glass encasements, nations, individuals or terrorist organizations lacking sophisticated technology would not be able to reprocess the materials without subjecting themselves to severe health effects. Immobilization preserves the material for future use, while minimizing the creation of new wastes. Even with the fuel option, not all of the potential fuel is of suitable quality for burning; a disposal program for this will be required anyway. Inventories of material, openly published and verifiable, would alleviate suspicions, permit careful monitoring and promote international agreements.

According to one speaker, "urgency is the name of the game" to prevent the dangers of a return to weapons production or the consequences of weapons-grade plutonium reaching the hands of terrorists.

It seems to this observer that although there are valid arguments for each of these possible methods of disposal, sustaining the plutonium cycle with the present technology by reprocessing and burning MOX fuel looks like a pork-barrel program for electric utilities, compounds the risks of nuclear proliferation, and certainly leads to even greater waste disposal and clean-up costs. To be able to urge other nations to place decreased reliance upon plutonium and to allay their suspicions regarding the United States' intended use of our plutonium, we must store it so that it is not readily recoverable, openly publish our inventory of stored nuclear wastes, and freely allow others to verify the disposition of these materials.

1/08.03.01

2/08.03.01

1/08.03.01
cont.

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Comment Number 1

08 03 01

The Department of Energy acknowledges the commentor's support for the immobilization disposition technologies. Immobilization disposition would place the material in a form which is not readily recoverable, and would permit verification of the disposition of the materials.

Comment Number 2

08 03 01

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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Society is not presently managing these materials and wastes well. If in the not-too-distant future the nuclear energy in these stored materials becomes essential for society, the waste-treatment technology and security procedures may have improved and be comparable with those of a still-evolving reactor technology. In twenty-five thousand years, the plutonium will still have half of the energy value that it has now.

A thorough discussion of this issue may be found in the 1994 report of the National Academy of Sciences: *Management and Disposition of Excess Weapons*.

David Jordan

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June 7, 1996

Mr. Greg Rudy
Acting Director
Office of Fissile Materials Disposition
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

Dear Mr. Rudy:

We are writing to provide our comments on the Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement ("DPEIS"). Despite the substantial effort that went into preparation of the draft analysis, there are a number of important issues that were given inadequate attention or no attention at all. Those defects, as discussed below, must be corrected if the final PEIS is to meet the requirements of the National Environmental Policy Act and the Department of Energy's (DOE) implementing regulations (10 C.F.R. 1021).

Nonproliferation and Cost Analyses Must Be Included in the DPEIS and Integrated into the NEPA Decision-Making Process

DOE is still preparing a cost analysis and a non-proliferation analysis of disposition options. At the April 18 public hearing on the DPEIS, you stated that those analyses eventually would be made available to the public when completed, but not prior to the end of the comment period, then scheduled for May 7. (At the urging of several public-interest groups, including some of those signing this letter, the comment period was extended to June 7, but not to 45 days after the cost and nonproliferation analyses are made publicly available, as requested.)

1/08.00.00

DOE claims that these analyses are not required for inclusion in the PEIS, which focuses on environmental issues. This is an inappropriately narrow view of the scope of programmatic environmental impact statements. As spelled out in the letter to Secretary O'Leary of April 5 requesting the delay, previous EIS's have included detailed nonproliferation analyses, even making non-proliferation a primary decision criterion. Cost analyses have been included as decision factors in a number of EISs, as well. The plutonium disposition DPEIS explicitly cites "non-proliferation," "security," and "cost-effectiveness" as among the screening criteria used in the disposition PEIS process to rule out certain disposition alternatives. Certainly the cost and non-proliferation analyses used to support these decisions must be incorporated into the PEIS itself.

It is our position, therefore, that the public comment period should remain open until 45 days after all relevant support documents, including the cost and non-proliferation analyses, are made publicly available. Therefore, these analyses, together with public

2/08.02.00

08 00 00 Comment Number 1

In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analysis were made available in the Fall of 1996. Each of these analyses along with the environmental analysis and public input will be integrated into DOE's decisionmaking process.

08 02 00 Comment Number 2

At the request of several organizations and individuals, the public comment period for the PEIS was extended to a total of 92 days. The technical, cost, and schedule analyses were made available to the public for review beginning in July 1996. The nonproliferation analysis was made available to the public for review beginning in October 1996. These analyses, along with consideration of public comments on these analyses and the Final PEIS are fully integrated in DOE's decisionmaking process.

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comments on them, must be fully integrated in the Department's decision-making process under NEPA.	2/08.02.00 cont.
Issues That Must Be Included in the Nonproliferation Analysis	
The National Academy of Sciences' (NAS) 1994 study ¹ of weapons-plutonium disposition proposed three proliferation risk factors for use in comparing plutonium-disposition options: risk of theft, risk of reversal, and impact on arms reduction. These are important criteria that should guide DOE's analysis, but the DPEIS does not specifically address them. These risks must be fully evaluated in the non-proliferation analysis and be made part of the DPEIS.	3/01.06.00
Analysis of the risk of theft and diversion must include a thorough examination of difficulties encountered with plutonium accountability at mixed-oxide (MOX) fuel fabrication plants. In particular, the 70-kilogram plutonium discrepancy at the Plutonium Fuel Production Facility (PFPP) in Japan is now the subject of an extensive clean-out inspection by the International Atomic Energy Agency (IAEA). The discrepancy results from excessive build-up of plutonium in the process line of this purportedly a state-of-the-art MOX fuel fabrication facility, and raises serious questions as to whether MOX disposition options can be adequately safeguarded. Nor does the lack of knowledge by the IAEA of the results of in-process materials accounting at MOX fabrication plants within Euratom provide any basis for assuming that these plants are subject to effective safeguards either.	4/01.06.00
Analysis of the risk of reversal must address the comparative difficulty of retrieving plutonium from final waste forms. Appendix H of the DPEIS, "High-Level Waste Forms Comparative Analysis," fails to examine these issues. A detailed comparative analysis of plutonium retrievability from spent MOX fuel and immobilized glass and ceramic waste forms must be included along with the factors already addressed, such as regulatory issues, criticality, thermal load, radiation, and releases.	5/01.06.00
Analysis of risks to arms control and nonproliferation must include a thorough assessment of the international repercussions of a U.S. decision on disposition technology. The DPEIS implicitly acknowledges the importance of what the NAS study called the "fuel cycle policy signal" when it posits that one of the goals of the disposition process is "to strengthen national and international arms control efforts by providing a storage and disposition model for the international community." ² But the DPEIS does not explicitly consider the fuel cycle policy signal that the MOX option would send relative to alternative immobilization options.	6/01.06.00
¹ Committee on International Security and Arms Control, National Academy of Sciences, <u>Management and Disposition of Excess Weapons Plutonium</u> , 1994.	M-289

01 06 00 Comment Number 3

The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action or negotiate reciprocal actions with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and nonproliferation policy impacts are described in separate documents and will be considered in DOE's decision. The documents related to technical, cost, and schedule analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the nonproliferation analyses, *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives*, as it relates to the Proposed Action and alternatives.

The analysis of the nonproliferation impacts examines, among other things, the risk of theft, risk of reversal, and arms reduction impacts for the various Reactor Alternatives using MOX fuel and Immobilization Alternatives.

01 06 00 Comment Number 4

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations (including the nonproliferation analyses), and public input. The nonproliferation analyses, *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives*, examines the potential diversion risk using MOX fuel fabrication, safeguards, "hold-up" material, and accountability to the IAEA and international community, among other things. These nonproliferation analyses have been made available for public comment and will be considered in the decisionmaking process.

01 06 00 Comment Number 5

One of the goals of materials disposition is to make the Pu as inaccessible and unattractive for weapons use as the residual Pu contained in commercial

7/01.06.00

In its September 27, 1993 non-proliferation policy statement, the Clinton administration declared that "the United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes." The possibility that the MOX option would have an adverse effect on U.S. non-proliferation policy by stimulating the use of MOX in civil nuclear power programs and thereby encouraging plutonium reprocessing and recycling must be addressed in the DPEIS's analysis.

Cost Analysis Must Include Subsidies to Nuclear Utilities and Be Integrated into the NEPA Decision-Making Process

Like the non-proliferation analysis, the cost analysis of plutonium disposition options now being prepared by Oak Ridge National Laboratory must be integrated into the NEPA decision-making process. That analysis must include all costs of the various disposition options, including subsidies being demanded by nuclear electrical utilities that have expressed interest in using weapons-plutonium MOX fuel. Given recent regulatory changes and the severe diseconomies of nuclear electricity generated at some facilities, these utilities face strong competition from non-nuclear electrical generators. An industry technical analysis fully anticipates that some utilities will insist upon not simply compensation for direct costs related to warhead plutonium disposition in their reactors, but subsidization of the electricity these reactors produce to guarantee that it is economically competitive with electricity from alternative non-nuclear sources, a subsidy that could cost U.S. taxpayers billions of dollars over the life of the plutonium-disposition program.¹ These costs must be carefully calculated in advance, so that they can be taken into account in the decision on disposition alternatives.

Pyroprocessing Immobilization Alternative Must Be Fairly Assessed

The DPEIS (Section 2.4.3.3) posits "electrometallurgical treatment" as one of the immobilization options. This technology, also known as "pyroprocessing," was developed by Argonne National Laboratory as part of the Integral Fast Reactor (IFR) Program, which DOE has since cancelled, largely on non-proliferation grounds.

Because it involves reprocessing technology, pyroprocessing poses a proliferation risk and undercuts U.S. non-proliferation policy aimed at discouraging reprocessing. Nor is it a sensible technical alternative; both a recent National Academy of Sciences study and an

8/01.04.00

¹ One study calculates that such a subsidy may run as high as six cents per kilowatt-hour, depending upon the utility and plants, equivalent to billions of dollars. GE Nuclear Energy, Study of Plutonium Disposition Using Existing GE Advanced Boiling Water Reactors, NEDO-32261, Prepared for the U.S. Department of Energy, June 1, 1994, p. 1.2-4.

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nuclear spent fuel (that is, the Spent Fuel Standard). The Pu contained in spent MOX fuel or in an immobilized glass or ceramic form is deemed to meet the Spent Fuel Standard. The proliferation resistance of the final MOX spent fuel and immobilized forms is compared for the various alternatives and variations in DOE's nonproliferation study, *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Plutonium Disposition Alternatives*, which was made available for public review in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the Nonproliferation Policy as it relates to the Proposed Action and alternatives. The proliferation analysis, along with the PEIS, public comments, cost, schedule, and technical analyses will be part of the decisionmaking process to support the ROD.

01 06 00 Comment Number 6

Converting surplus Pu into MOX fuel is not the end state. The end state is to use the MOX fuel in a reactor so that it meets the Spent Fuel Standard for proliferation resistance after irradiation. While the Pu is in the MOX fuel form, it would be subject to high standards of safeguard and security.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is not being proposed by DOE and is beyond the scope of the fundamental nonproliferation purpose of the disposition effort. The fact that the PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not further propose or evaluate reprocessing of the spent fuel, does not suggest or propose reprocessing for the management or disposition of the spent fuel.

The President's Nonproliferation Policy does not prohibit the use of MOX fuel, but rather restricts the separation of Pu for civilian use. Fabricating MOX fuel from surplus weapons-usable Pu and using that fuel in a once-through fuel cycle would meet the Purpose and Need of the PEIS for Pu disposition and would not violate the President's policy.

internal DOE report³ reject it as a viable weapons-plutonium disposition alternative. DOE has ignored these considerations in its analysis. They must be included in the Final PEIS analysis, which, accordingly, must reject electrometallurgical treatment as an option for plutonium disposition.	8/01.04.00 cont.
Safety and Health Impacts of Disposition Options Must Be Consistently and Accurately Assessed A major objective of the DPEIS should be to present a thorough evaluation of the occupational and public health risks of different weapons-plutonium disposition options. Disposition options then should be ranked according to the risks they pose, and this ranking should play an important role in the eventual choice of disposition option.	9/09.09.08
The DPEIS, however, fails to accomplish this objective. Its methodology for evaluating and comparing the safety risks of different disposition options is logically inconsistent and confusing. These inconsistencies serve to exaggerate the risks of the immobilization options relative to the reactor-based options. They must be corrected in the final version to provide a fair presentation of the evaluation and ranking of the safety risks of immobilization and reactor-based disposition options.	10/09.09.08
Such a presentation would show that the health and safety impacts of the immobilization options will be substantially lower than those associated with the reactor options. However, the DPEIS is structured to minimize the significance of this fact.	11/09.09.08
What follows is a partial listing of the deficiencies we have identified: - The DPEIS overestimates the safety and health impacts of the immobilization options by explicitly including only the absolute impacts of options requiring new facilities, and not the incremental impacts associated with existing facility process variants, such as can-in-canister at the Defense Waste Processing Facility (DWPF). On the other hand, the DPEIS does explicitly evaluate the incremental impacts of the existing Light Water Reactor (LWR) MOX option with respect to normal (as distinguished from accident) emissions. This leads to an inconsistent comparison of the two options. - The accident analysis of the LWR option is based entirely on an irrelevant case, an evolutionary LWR fueled with low-enriched uranium, which does not account for the numerous unresolved safety issues associated with the use of full-core, weapons-grade	

³ "Comments on the Electrometallurgical Process," attachment to letter to Bill Denker, MD-1, from Leonard Gray, Task Leader, Fissile Materials Immobilization Task [sic], Fissile Materials Disposition Project, August 30, 1995; Gregory R. Choppin, et al., An Evaluation of the Electrometallurgical Approach for Treatment of Excess Weapons Plutonium, National Research Council, 1996.

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Comment Number 7

01 06 00

The President's Nonproliferation Policy says the United States will not recycle Pu. Burning weapons-usable Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this process will not be extracted for reuse in new fuel. This is consistent with U.S. policy since no Pu is being recycled. After a once-through fuel cycle, the Pu would be converted to a nonproliferation form as spent reactor fuel.

Comment Number 8

01 04 00

The Department of Energy acknowledges the commentator's opposition to the Electrometallurgical Treatment Alternative. Information and assessments on Electrometallurgical Treatment will be taken into account in the decision process. Separate technical, schedule, and cost analyses on the disposition options, including the Electrometallurgical Treatment Alternative, were issued by DOE beginning in late July 1996; the nonproliferation analysis of the disposition options, including electrometallurgical treatment, was issued for public comment in October 1996. The Electrometallurgical Treatment Alternative is analyzed in the PEIS because it is a "reasonable" alternative, and as such, must be analyzed under NEPA. Section 2.4.4.3 of the PEIS has been revised to note the NAS concerns regarding the use of electrometallurgical treatment for Pu disposition. Further, Electrometallurgical Treatment Alternative is not included in the Preferred Alternative.

Comment Number 9

09 09 08

Potential human health impacts from Proposed Actions are analyzed and documented in this PEIS as required by NEPA. To inform the public and decisionmakers, all latent cancer risks associated with the alternatives are presented in the PEIS regardless of their risk magnitude. The ranking or decisionmaking analysis of the alternatives will be based on various factors including human health impacts. DOE's intent in the PEIS is to provide an unbiased environmental analysis of all alternatives. However, the Reactor Alternatives generally do have more available information than other disposition alternatives because of industry experience.

MOX fuel in existing LWRs or CANDUs. As a result, the important issue of how accident impacts may increase if MOX is substituted for LEU in existing reactors is not addressed. This is a crucial point because the incremental accident risks resulting from this substitution may actually exceed the absolute risks of an evolutionary LWR accident as cited in the DPEIS.	11/09.09.08 cont.
• A DPEIS reference document⁴ lists LWR accidents with higher frequency and greater consequences than the most severe LWR accident sequence evaluated in the DPEIS; • The geographical range of the safety analysis is unjustifiably limited: the choice of an 80-km threshold for consideration of public health impacts leads to absurd conclusions, such as the notion that an accident in a Canadian CANDU reactor would have no environmental impact in the US; • The absence of discussion of economic and other external factors severely impairs the credibility of the safety analysis, especially as it applies to the MOX option.	12/09.09.08
<i>Transportation Safety and Security Issues Must Be Addressed</i>	13/09.09.08
The DPEIS does not discuss the security arrangements for sea shipments of plutonium or MOX reactor fuel, which would be necessary if verheer-plutonium MOX fuel were fabricated in Europe. These arrangements may be included in the classified appendix on transportation.⁵ If so, some aspects of these arrangements should be made a part of the public record and subject to independent evaluation. Further, there is no discussion of transportation security arrangements with the government of Canada if CANDU reactors were used. These matters require clarification. The DPEIS needs to state publicly what level of security will be required for shipments of plutonium and MOX. This can be done without providing explicit details regarding armament, routing and scheduling that might prove useful to a potential adversary.	14/09.09.08
Appendix G compares transportation impacts for the different disposition alternatives. The analysis understates the environmental hazards of transporting radioactive material by embracing the Type B transport standards and assigning a low probability to an accident that could result in a breach of the Type B cask. The appendix ignores recent	15/10.00.00
	16/10.02.00
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⁴ Fissile Material Disposition Project, Lawrence Livermore National Laboratory, Evolutionary/Advanced Light Water Reactor Data Report, UCRL-ID-123411, February 9, 1996, Table 8-5, p. 8-14.

⁵ This classified appendix is mentioned on page 4-783 of the DPEIS, but a citation is not given and no further information is provided.

09 09 08 Comment Number 10

The human health impacts for both the existing condition (No Action) and the Proposed Actions are evaluated and presented for all Proposed Alternatives in the PEIS, including the Existing LWR Alternative (The health impacts from potential accidents for the three Reactor Alternatives using MOX fuel are also analyzed.) The incremental impacts are those impacts from Proposed Actions over existing conditions at the same site. For example, the incremental impacts of using the partially completed LWR would be represented by the total impacts because the LWR was not operated before. Whereas, the incremental impacts of using the existing LWRs would be represented by the differences between using the proposed MOX fuel and the current uranium dioxide (UO₂) fuel. Section 4.3.5.2.9 of the Final PEIS has been modified to show the incremental and total impacts.

Appendix O was added to the Final PEIS to provide a description of the immobilization variants utilizing the can-in-canister approach at SRS. The DWPF (an existing facility) is included in this description. The preferred alternative in the Final PEIS includes the immobilization alternative in new or modified existing facilities. Further tiered NEPA analysis will be provided, as appropriate, for the alternatives selected in the ROD. Table 2.4-1 of the PEIS also included possible variants, many of which utilize existing facilities.

09 09 08 Comment Number 11

The human health impacts for both the existing condition (No Action) and the Proposed Action are evaluated and presented for all alternatives in the PEIS, including the Existing LWR Alternative. (The health impacts from potential accidents for all three Reactor Alternatives using MOX fuels are presented in the Final PEIS.) Incremental impacts are those impacts from the Proposed Actions over the existing conditions at the same site. For normal operations, both incremental impacts and total impacts are presented in the PEIS for each disposition alternative. While incremental impacts may appear lower for existing alternatives, the total impacts do not cause misleading impressions. Also, an inclusion of potential avoided environmental impacts from a Proposed Action is appropriate to the NEPA process. The avoided environmental impacts are presented when the potential environmental

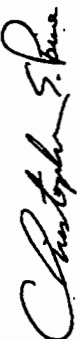
expert reports that challenge the adequacy of the Type B standards,⁴ as well as ongoing initiatives within the IAEA and the International Maritime Organization (IMO) to re-evaluate these standards in the context of historical data about accident conditions. Instead, the DPEIS relies on earlier reports to assert the adequacy of Type B containers. The DPEIS' analysis is cursory and outdated, and must be revised to take into account the most recent studies and the ongoing IAEA and IMO re-evaluations of these risks.

We believe that all of the above issues must be thoroughly addressed for the PEIS to conform with NEPA requirements and provide an adequate basis for the Secretary's decision on long-term disposition of weapons-usable fissile materials.

If you would like further detail on the above points, please contact Steven Delley of the Nuclear Control Institute at 202-822-8444.

Sincerely,


Paul Leventhal
Nuclear Control Institute


Christopher Paine
Natural Resources
Defense Council


Daryl Kimball
Physicians for Social
Responsibility


Jennifer Weeks
Union of Concerned
Scientists

⁴ Illinois Institute of Technology Research Institute (IITRI), "Definition of Bounding Physical Tests Representative of Transport Accidents—Air and Marine," IITRI KO6019, November 1983; ECO Engineering, Inc., Annapolis, MD., "A Review of the Proposed Marine Transportation of Reprocessed Plutonium from Europe to Japan," March 1992; Edwin S. Lyman, Princeton University School of Engineering/Applied Sciences, "Safety Issues in the Sea Transport of Vitrified High-Level Radioactive Wastes to Japan," December 1994.

impacts from the Proposed Action are less than the impacts from the existing condition.

09 09 08 Comment Number 12

The accident impacts for existing and partially completed LWRs were taken from existing documents for a set of representative facilities. Accident impacts presented in the PEIS were the average impacts of the representative facilities. However, the Final PEIS includes quantitative health risk analyses for the evolutionary, existing, and partially completed LWRs using MOX fuel for both normal operations and potential accidents.

09 09 08 Comment Number 13

Like any other EIS, a realistic impact area has to be defined to conduct radiological impact assessment. Federal guidance defines two major impact regions. NUREG-0654 defines 16 km (10 mi) as the plume exposure region and 80 km (50 mi) as the ingestion exposure region for the nuclear facility accident emergency planning zone. While populations at greater distances may receive some exposure from an accidental release of radioactive material into the environment, this exposure would be considerably less than the exposure to the population within the 80 km (50 mi) region. Also, extending the assessment to further distances would introduce greater analytical uncertainties to the calculated impacts.

It is acknowledged that if the source term was very large then the boundaries chosen could be extended. Nevertheless, NUREG guidance is an appropriate and reasonable choice for NEPA analysis.

09 09 08 Comment Number 14

Technical, cost, and schedule analyses were made available to the public beginning in July 1996. The nonproliferation analysis was made available to the public in beginning in October 1996. Input from each of these analyses will be integrated in the DOE's decisionmaking process.

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Tom Clements
Tom Clements
Greenpeace International

Fred Miller
Fred Miller
Nuclear Waste
Citizens Coalition

Bill Magovern
Bill Magovern
Public Citizen

Kathryn Crandall
Kathryn Crandall
Women Strike for Peace

Michael Mariotte
Michael Mariotte
Nuclear Information Resource
Service

cc: Dave Nutton

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10 00 00

Comment Number 15

The PEIS analysis assumes that transport of Pu by ship would be done by dedicated British Nuclear Fuel, Limited, or COGEMA ships from military seaports in the United States to seaports in Great Britain or France. The transport would meet applicable IAEA requirements and the International Maritime Organization (IMO) code. While in temporary storage at the seaports and during transport on the ship, appropriate escort security measures would be implemented. Section G.1.2.5 provides a description of the transportation effects on the global commons and includes the results of an environmental assessment of the sea shipment of Pu, *Environmental Assessment of the Import of Russian Plutonium-238*, referenced in the PEIS as DOE 1993x. Technical and licensing issues related to the MOX fuel fabrication have been considered by DOE in the technical evaluations of the storage and disposition alternatives, which were issued in late July 1996. It is anticipated that MOX fuel fabricated in Europe would not be used in a reactor in Canada.

10 02 00

Comment Number 16

Type B packagings are currently certified safe for transporting radioactive materials. The comments were given consideration for the PEIS, but the analysis used is for currently certified packagings. If the safety certification for the packaging is withdrawn, then new analyses would be required.

LEWIS, MARVIN, PHILADELPHIA, PA
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Date Received: 06/12/96

Comment ID: P0051

Name: Marvin Lewis

Address: 3133 Fairfield Street
Philadelphia, Pennsylvania 19136

Transcription:

My name is Marvin (Ma-e-vi-n) Lewis (L-e-wi-s), 3133 Fairfield Street, Philadelphia, PA 19136 Area Code (215) 676-1291. I appreciate that the comment line is still open. I hope that there has been an extension for comments on the supremely dangerous and very problematical programmatic PEIS. But to go on with my comments, yes, there is plutonium produced in commercial nuclear reactors. However, to start with MOX, mixed oxide fuel, is a matter of danger, great danger. This was gone over back in the -- when it was first proposed commercially, many years ago in GESMO, General Environmental Statement on Mixed Oxide Fuel. The very comments I made in GESMO and all the comments in GESMO should be incorporated as a minimum, into this PEIS. Many, many issues were raised that have been lost from memory both institutional and personal. And I've also lost a lot of the paperwork which is almost impossible to find -- except in the NRC Reading Room. This is a dangerous, impossible suggestion that we go to mixed oxide fuel. Many reactors are in areas of high population. Any, any plutonium releases would be disastrous. I really ask that whomever thought this one up, rethink it and stop it. Respectfully submitted, Marvin Lewis.

1/08.03.01

P-051

LINDSTROM, JUDY M., PLEASANT HILL, TN
PAGE 1 OF 1

Judy M. Lindstrom
PO Box 255
Pleasant Hill, TN 38570
May 1, 1996

U.S. DOE, Office of Reconfiguration
PO Box 3417
Alexandria, VA 22302

Dear DOE:

I do not agree with your Programmatic Environmental Impact Statement (PEIS) on nuclear weapons and materials for our nuclear weapons complexes. The options you've considered for disposal or disposition of excess refined materials are unsafe and does not solve the waste problem:

--Nuclear reactors that use plutonium also produce plutonium and even larger quantities of dangerous by-products.

--The cost of developing and maintaining reactors is prohibitive.

--Traditional methods of disposal (e.g., deep bore hole disposal) are unreliable, given the unstable and long-term nature of these wastes.

I urge you to adopt a plan that would limit the amount of processing and transportation of materials, and certainly not plans that would increase the amount of wastes. Consider vitrification or glassification of plutonium, which would immobilize it and also help prevent "proliferation."

Yours truly,
Judy M. Lindstrom

1/08.03.01

2/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

F-058

Date Received: 04/03/96
Comment ID: P0002
Name: Valerine Litt
Address: Oak Ridge, Tennessee

Transcription:

My name is Valerine Litt. I want that stuff at Oak Ridge out of there. I read an article that the cancer rate within a 100 mile radius was higher than any other place in the nation. I have lost six members of my family to cancer in the last 20 years. I now have one brother that has been free of throat cancer for five years after two major surgeries and 12 radiation treatments. I myself had cancer of the uterus 20 years ago. Why not put it somewhere else? I went to Oak Ridge when I was fifteen years old when you had to go through a gate where there was guards where this radiation stuff and the war material and all of that there. We have had it long enough in this area. Get it out. Now.

1/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentator's opposition to new missions at ORR. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-002

LOCKE, JOHN W. AND JOYCE C., AMARILLO, TX
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Waste/hazardous material treatment/handling operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface water that could then migrate to the groundwater. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

6202 Yale
Amarillo, Texas 79109-6727
April 27, 1996

Department of Energy
1000 Independence Avenue, S. W.
Washington, D. C. 20585

Re: Pantex - No Plutonium

Dear Ms. O'Leary:

We are against the long-term storage and disposition of plutonium and highly enriched uranium at the Pantex plant located at Amarillo, Texas.

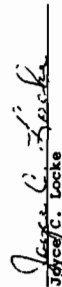
We feel the storage of radioactive material at Pantex endangers the Ogallala Aquifer which is the "blood" that nourishes our nations's farm land.

I was exposed to radioactive material in Operation Crossroads (Bikini, 1946) and have since learned that NO amount of radiation is safe.

Please do not make Pantex a nuclear long-term storage facility.

Sincerely,


John W. Locke


Joyce C. Locke

1/08.03.01

M-201

LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NM,
KEN BOWER
PAGE 1 OF 1

08 02 00 Comment Number 1

Comment noted.

Forwarded message:
> From: httpd Thu Nov 16 14:16:51 1995
> Date: Thu, 16 Nov 1995 14:16:50 -0500
> From: HTTPD Daemon <httpd>
> Message-Id: <199511161916.AA00853@fedix.fie.com>
> Reply-To: doemdl
> Subject: COMMENT Form - incoming
> Apparently-To: doemdl1-demo@fedix.fie.com
>
> ** To be properly posted to the correct forum area the
> ** reply to this message MUST be mailed to >> doemdl1@fedix.fie.com << !
>
> **
> ** This message was generated by the submission of a From Comment
> ** on the Fissile Materials Electronic BBS. Reply to this message
> ** with the text of this message included in the reply. All "Replied"
> ** are publicly available on the Electronic BBS
>
> ** This is information generated at the time of submission and is
> ** used to track individual comments. It should not be changed!
> #fTo = doemdl1-demo@fedix.fie.com
> #serial_no = 131
> #MailTitle = COMMENT Form - incoming
>
> ** The following information is DATA from the comment form. The
> ** "ctype" is the Author's Request for a Public or Private comment.
> ** If you do not want this message to be publicly posted to the BBS
> ** do nothing or reply to the author directly.
> #name = Ken Bower
> #title = Staff Member
> #company = Los Alamos National Laboratory
> #addr1 = A117
> #addr2 =
> #city = Los Alamos
> #state = New Mexico
> #zip = 87545
> #phone = 505-665-2578
> #fax = 505-665-4411
> #email = kebower@lanl.gov
> #subject = internet access to FEIS
>
> ** The following is the text of the Author's Comment.
> #BEGIN comment =
> Making the FEIS available on-line is extraordinarily valuable. Thank you!
> #END comment

| 1/08.02.00

E-001

LOSEY, DAVID C., AIKEN, SC
PAGE 1 OF 1



David C. Losey
1628 Clinton Drive
Aiken, South Carolina 29803-5224

May 7, 1996

Mr. J. David Nulton, Director
DOE - Office of Fissile Materials Disposition
c/o SAIC - PEIS
P. O. Box 23786
Washington, DC 20026-3786

Dear Mr. Nulton:

I'd like to offer these comments on the EIS for *Storage and Disposition of Weapons-Usable Fissile Materials*.

The spent fuel standard provides a fundamental basis for much of the proposed action in the EIS. This basis may be flawed without a disposition path for the spent fuel. We shouldn't assume that at some future time we'll merely bury the spent fuel. There is a growing awareness that burying wastes in the earth is a poor option.

Relying on the spent fuel standard needs to be preceded by DOE taking responsibility for closing the spent fuel cycle. It is important to have the disposition path opened before converting the excess weapons plutonium to spent fuel. The benefits gained by making the plutonium unattractive through activation could be grossly outweighed later by difficulty in handling the material.

Please consider having the entire plutonium disposition plan in place before activating or mixing the plutonium with radioactive contamination.

Thank you for the opportunity to comment on this program.

Sincerely,
David C. Losey
David Losey

1/01.02.00

M-190

01 02 00 Comment Number 1

The ultimate disposition path, an NWPA geologic repository, for the spent fuel would be the same as any spent fuel from nuclear reactors in the United States. Design of the MOX fuel containing weapons-usable Pu is done such that the spent fuel would meet the performance criteria for disposal in an NWPA geologic repository.

08 00 00 Comment Number 1

A Preferred Alternative was not identified in the Draft PEIS for two reasons. First, DOE wanted to obtain public input on the alternatives before identifying a Preferred Alternative. Second, DOE wanted to develop additional information on technical, cost, schedule, and policy consideration independent of the NEPA analyses. The results of the technical, cost, and schedule analyses were issued by DOE in July 1996 and the results of the nonproliferation study were issued in October 1996. This information will be used in determining the ROD.



NAME: (Optional) Michael J. Lowrey
ADDRESS: 6504 Feltner Amarillo Texas 79109
TELEPHONE: (806) 359-0112

No preferred option was rendered on the
Plutonium storage assessment. After the
public meetings are will be proposed there
will be a 30-day comment period but no
individual written response document on
this option. With the other assessments
given a preferred option - where is
the equity?

1/08 00.00

TX-052

The Secretary's February 6, 1996, Openness Initiative announced the locations and quantities of surplus weapons-usable fissile materials. This announcement was to provide the general public with information which DOE could use in reviewing the proposed departmental actions and provide informed input to the decisionmaking process. This announcement was made with full consideration of national security.

1/15.00.00

DC-003

MANNING, SAM P., SPARTANBURG, SC
PAGE 1 OF 1

Comment ID: P0036
Date Received: May 1, 1996
Name: Sam P. Manning
Address: P.O. Box 355
Spartanburg, SC 29304
Phone: 803-582-5220

Transcription:

I had expected to be at the North Augusta Community Center meeting on April 30, however, I am in the hospital at present, and unable to come due to a heart problem. I therefore, respectfully request that a copy of the storage and disposition of weapons-usable fissile materials draft PEIS be sent to me [address]. Also please send me a copy of the stockpile stewardship and management draft PEIS. I also respectfully request an opportunity to file a statement in the next ten days, as I'm in the hospital and have been unable to prepare the report like I had requested. I am concerned in reference to the amount of nuclear storage that may be placed on the shoulders of the State of South Carolina, as I think it's too much and presents a danger not only to South Carolina, but to North Carolina and Alabama based on the amount. I thank you, and I hope to get a message in later, but I'd be most grateful if you'd mail me that material, and also give me permission to file a statement within the next ten days. I thank you so much.

I had planned and expected to be in Augusta tomorrow afternoon to make a presentation. I regret at present I am in the hospital. I request permission to file a ten page to file a statement in the next ten days expressing my concerns in regards to the burden of nuclear radioactive waste that South Carolina has to carry. I fear that we are building up a situation that may be dangerous for the State and for the Nation due to the concentration of nuclear waste and nuclear weapons in this area. I regret that I cannot be present for the hearing on Tuesday, as I stated, I respectfully request permission to file a statement in regards to all three matters and I think, I'm hoping it will be the issues that will be raised will be raised by or considered by the leading scientists in the Nation. I thank you.

I had expected to be in Augusta on Tuesday the 29th correction on Tuesday the 30th, but I am in the hospital. I would appreciate it though if you would carry these comments, and I hope to be able to submit a more formal statement. I reference to the storage of nuclear weapons. It is my understanding that they should be stored in an area where there are very few people and that is very dry. The Savannah River Site has 500,000 people living within 100 miles of the facility. It also adjoins the Savannah River for 22 miles. The Savannah River Site at present has over 505 of the county's high level radioactive waste. It should be removed to a drier area. It should not be increased. I thank you.

1/08.01.00

2/08.03.01

P-036

08 01 00 Comment Number 1

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to new missions at SRS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

MANNING, SAM P., SPARTANBURG, SC
PAGE 1 OF 2

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at SRS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

CALL-IN COMMENTS ON DOE'S FEIS

MR. MANNING: Sam P. Manning, Attorney at Law, Spartanburg, South Carolina. My address is Post Office Box 355, Spartanburg, SC. I am calling to express concern in reference to the possible location of additional nuclear weapons and waste in South Carolina. I would have attended the hearings at North Augusta on April 30th, but was in the hospital due to a heart problem of blockage of the main artery.

I will state my concern and ask that it be included in the record in regards to such matters, and I would ask -- I base my comments on this knowledge, which I believe is uncontradictable, that South Carolina at the present, based on official Government Department of Energy records, South Carolina has within its borders more high-level radioactive waste than any other State. South Carolina also, since World War II, has had this tragic problem develop. According to the National Centers for Disease Control in Atlanta, South Carolina has a higher percentage of birth defects, and of the worst birth defects, than any other State. This is when a baby is born with its brain outside the skull or when the baby has spina bifida. It is my hope that they can get thorough and complete scientific studies to try to ascertain what creates this problem.

Approximately two years ago, an official statement from the Savannah River Site made this statement, that "radiation can cause cancer, and radiation can cause birth defects," but for purposes of an environmental statement, "incidences of cancer will only be counted where the person had died, and birth defects in this or future generations will not be counted or considered."

South Carolina is a brave and wonderful State. We must have a greater emphasis on science and research, and we have to be careful in our State that our citizenry and future children are not destroyed.

I would ask that the studies dealing with the storage and disposition of weapons, fissionable materials, that the Savannah River Site not be considered as a depository for such. I would also respectfully request to inspect the

1/08.03.01

P-045

MANNING, SAM P., SPARTANBURG, SC
PAGE 2 OF 2

Stockpile Stewardship and Management, that Savannah River Site not be considered. South Carolina already carries a great share of the environmental burden for the Nation. Scientific studies have stated that in respect to radioactive waste problems, that they should be stored in an area that has a minimum of population and does not have a great deal of water. The Savannah River Site adjoins the Savannah River for 22 miles. It has a substantial population within 50 miles of the boundary, and for the protection of the southeastern United States and Savannah River, the emphasis and the push must be on making this area safe for the Nation. With 360,000 liters of plutonium solution, the percent of possible of nuclear chain reaction, it would be foolhardy to increase the burden. The Nation is already looking, apparently with favor, on storing 17,000 aluminum-clad fuel rods at Savannah River from 41 foreign countries. It is in the interest of not only South --

[Recorded MAY 17 at 5:42 p.m.]

P-045

MANNING, SAM P., SPARTANBURG, SC
PAGE 1 OF 1

CALL-IN COMMENTS ON DOE'S PEIS

MR. MANNING: This is Sam P. Manning, Attorney at Law.

I am calling now to add this to the earlier comment that I made. I have been in the hospital due to a heart blockage question, but I would like for my statements to be included in the environmental impact statement or the study. I was unable to attend the North Augusta Community Center program, which was April 30th, and I would like these comments to be included.

In reference to continuing the operation of the Pantex plant and associated storage and development of nuclear weapons, I would ask that the Savannah River Site not be considered for such. South Carolina at present, based on Department of Energy records, has more than 50 percent of the country's high-level radioactive waste. We also have the highest incidence of (inaudible) birth defects. Savannah River two years ago made the statement that radiation can cause cancer, and that radiation can cause birth defects, that they would only count cancer when somebody has died, and they would not count the birth defects in this or future generations.

What the emphasis must be on at Savannah River is adequate and full research for the protection of the general public. They have there at present 360,000 liters of plutonium solution that, according to a DOE study, presents a possible criticality event. For the protection of the southeastern area of the country -- not only the Carolinas, but Georgia and the Nation -- increased emphasis must be given on safety. Also, we must protect the young people of tomorrow.

I thank you. It is a privilege to be able to make this statement. Thank you.

[Recorded May 17 at 5:52 p.m.]

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator's opposition to new missions at SRS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

1/08.03.01

P-046

MARE, LISA K., ET AL.
PAGE 1 OF 2

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at NTS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

DOE-Office of Fissile Materials Disposition
c/o SAIC-PEIS
P.O. Box 23786
Washington, D.C. 20026-2786

To Whom It May Concern:

We the undersigned protest the storage of nuclear waste, plutonium and uranium in the state of Nevada.

1/08.03.01

Lisa K. Mare
Glenn Hauer
Quintina M. Brooks
Shila
Richard J. Jurek

I left this letter and the enclosed story on a clipboard in the lunchroom for one shift and five out of eight people signed it. We are all residents of Nevada.

Thank you for listening
to our opinion.
R.S.

M-022

CLARK COUNTY/STATE		09/04/02	14/00/00
Shoshone leader describes deadly nuclear legacy By Mary Muench LAS VEGAS (AP) — A Shoshone leader who has spent his life fighting to protect his people's land and culture from the threat of nuclear weapons, said Tuesday that the legacy of the atomic age is a deadly one. Cliff Smith, 68, a member of the Shoshone Nation, said he has seen the effects of nuclear weapons firsthand. He has lived in the area of the Nevada Test Site, where the United States conducted nuclear weapons tests from 1951 to 1992. He has seen the contamination of the land and the health problems of the people who lived there. Smith said he has seen the effects of nuclear weapons in the form of cancer, birth defects, and other health problems. He said he has seen the effects of nuclear weapons in the form of the contamination of the land and the water. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment. Smith said he has seen the effects of nuclear weapons in the form of the destruction of the environment. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment.		2/09.04.02	3/14.00.00
cont.		2/09.04.02	3/14.00.00
CLARK COUNTY/STATE Shoshone leader describes deadly nuclear legacy By Mary Muench LAS VEGAS (AP) — A Shoshone leader who has spent his life fighting to protect his people's land and culture from the threat of nuclear weapons, said Tuesday that the legacy of the atomic age is a deadly one. Cliff Smith, 68, a member of the Shoshone Nation, said he has seen the effects of nuclear weapons firsthand. He has lived in the area of the Nevada Test Site, where the United States conducted nuclear weapons tests from 1951 to 1992. He has seen the contamination of the land and the health problems of the people who lived there. Smith said he has seen the effects of nuclear weapons in the form of cancer, birth defects, and other health problems. He said he has seen the effects of nuclear weapons in the form of the contamination of the land and the water. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment. Smith said he has seen the effects of nuclear weapons in the form of the destruction of the environment. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment. He said he has seen the effects of nuclear weapons in the form of the destruction of the environment.		2/09.04.02	3/14.00.00

M-022

Comment Number 2

09 04 02

As discussed in Sections 2.4.3 and 4.3.3.1.4 of the Draft PEIS, extensive precautions would be taken to ensure that criticality of the Pu emplaced into the deep borehole would not occur. There would be a site-specific study, formulation of appropriate regulations, detailed engineering studies, and computer modeling before the deep borehole facility would become operational. Section 4.3.3.1.4 of the Draft PEIS describes the environmental impacts for a deep borehole on a programmatic level so that a comparison can be done between the disposition technologies.

Comment Number 3

14 00 00

The Department of Energy applied results of a screening process along with public input to identify a range of reasonable alternatives for analysis in the Draft PEIS, and utilized technical reports and analyses from national laboratories and the industry to develop a final list of alternatives. Details were published in a separate report, *Summary Report of the Screening Process to Determine Reasonable Alternatives for Long-Term Storage and Disposition of Weapons-Usable Fissile Materials* (DOE, March 1995).

MARENGO APPLIANCES, MARYSVILLE, MI,
PAUL MARENGO
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentator's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input. This will include an appropriate level of analysis by Canada before any decision on burning Pu in a CANDU reactor is implemented.

MARENGO APPLIANCES
PAUL MARENGO
FAT 80 902-0455

10/24/90 10:00 AM
FAT 202-588-870

I need to reprimand people. The transport of plutonium, under the supervision of Mike from Maryland, even country and through State House, is to show CANUK in Ottawa. Cd.

Buyers as well know plutonium is the world's most potent, hazardous material in the world.

Please do not oppose American, Canadian, and the conventional forces a dangerous, almost mortal hazard.

Paul Marengo
1990 Davis Rd, Apt #106
Marysville, MI
48040

1/08.03.01

1/08.03.01
cont.

F-068

DOE Public Meeting on
Draft Environmental Impact Statements
April 30, 1996

There are three draft environmental impact statements on which the DOE is soliciting public comments. These three documents cover plutonium storage and management:

- * The Pantex EIS considers SRS as an alternative for storage of up to 20,000 plutonium pits, most of which are currently stored at Pantex.
- * The Stockpile Stewardship and Management EIS evaluates SRS as an alternative for plutonium recovery and remanufacturing of plutonium pits to maintain the nuclear stockpile.
- * The Disposition of Weapons Usable Fissile Materials EIS considers alternatives for consolidating plutonium storage and technologies for disposing of surplus plutonium.

SRS is under consideration for a major role in each of these programs. Following are some points that relate to these issues:

- (1) A key part of any decision concerning these programs is the attitude of the neighboring communities.

SRS's neighbors in Georgia and South Carolina have supported SRS operations since the location was named 46 years ago as a weapons material production plant. Over these years, operators of SRS have been prudent, responsible, and world-class in technical ability.

This community naturally welcomes additional missions of this type and jobs and money coming in, especially after so much has left the last few years. We also know and trust the people at SRS.

Because of the support SRS enjoys, we urge DOE to choose SRS as the site for the future needs discussed in these EIS's.

- (2) In many cases SRS has the facilities and capability already in place for certain of the EIS alternatives, and additions needed could be installed very cost-effectively by DOE.

Storage of nuclear materials, for example, is commonplace activity at SRS, and SRS officials report that they are already planning a modular storage facility, which could be easily modified for additional capacity. The storage unit is budgeted at \$150 million, and additional storage capacity would roughly double that number.

- (3) If it is determined that the national interest requires a large scale effort to reconstitute the plutonium pits now in the stockpile, a large percentage of which are decades old and potentially unreliable, SRS has the expertise and many of the facilities to perform that job

1/08.03.01

SR-010

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for SRS. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

MAYSON, W. PENLAND, JR., AUGUSTA, GA
PAGE 2 OF 2

cost-effectively.

The capital investment of that option is about \$350 million, much of which would return to the community in the form of purchases and construction wages.

(4) Excess plutonium must be managed properly. Storage is an option, but there is also the possibility of obtaining energy benefit from plutonium by making mixed oxide fuels for use in nuclear reactors. SRS is a logical place for fuel manufacture because of the existing plutonium handling facilities and expertise onsite. This would represent construction and related expenditures of about \$350,000.

At the same time, SRS is essentially the center of applied vitrification technology in this country, and would be the ideal location for vitrifying plutonium as an anti-proliferation action. Capital costs would be about \$500 million.

(5) It must be remembered that SRS has the only active large-scale plutonium processing facility in the nation.

(6) SRS not only has the capability to perform each of these missions safely and effectively, but in fact, is the only site that which can perform all of the missions.

SRS has the technology, infrastructure support, and facilities to immediately implement the NEPA decisions. Only SRS retains large-scale functioning plutonium capability. Only SRS has experience at startup and operation of nuclear facilities with today's standards of operation. Only SRS can provide the Department the capability to merge all of its plutonium functions at a single site with billions of dollars of savings which will result from this approach.

W. Penland Mayson, Jr.
3028 Bransford Rd.
Augusta, Ga. 30909

1/08.03.01
cont.

SR-010

McFARLAND, LEWIS L., PORTLAND, OR
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Lewis L. McFarland
5925 Southwest Sixtythird Avenue
Portland, Oregon 97221
(503) 245-3170

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

RE: MOX Reactors at Hanford

Ladies and Gentlemen,

I just read a review of WPSS plan to put together a consortium of 5 utilities to run 10 reactors at taxpayers expense that would use MOX. As a citizen of the Northwest, a taxpayer and a holder of a degree in math-physics I am opposed to any such plan. The world does not need more nuclear waste to get rid of. These reactors are expensive and have proven to be quite unsafe.

Sincerely,



Lewis L. McFarland

copy: Elizabeth Furee
US Congress

1/08.03.01

M-247

MILLER, SCOTT, BOISE, ID
PAGE 1 OF 1

08 02 00
Comment Number 1
Comment noted.

Comment ID: P0019
Date Received: April 18, 1996
Name: Scott Miller
Address: Boise [ID]

Transcription:

I'm commenting on the Department of Energy's material. I'm glad they have an 800 number to comment on. I feel the state of Idaho is 1 million people strong. It's a weak state because of the population. Anything the Department of Defense or Department of Energy wants to do in the state is fine as long as there's regulations and groups that are informative of what's going on in the state. Please ask people what they think, especially the State of Idaho. It's a beautiful state and I hate to see it ruined.

1/08.02.00

P-019

MILLS, LORING E., STEVENSVILLE, MD
PAGE 1 OF 4

Loring E. Mills
132 Eareckson Lane
Stevensville, MD 21666
Tel: (410) 643-1244

April 25, 1996

U. S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

Subject: Comments on Storage and Disposition of Weapons-Usable Fissile Materials,
Draft Programmatic Environmental Impact Statement (PEIS), February 1996

Gentlemen:

The Federal decision on storage and/or disposition of weapons-usable fissile materials will have an environmental impact on Global Climate Change. Global climate change is the primary national and international environmental concern of the 21st Century. Surprisingly, the Draft PEIS does not effectively evaluate and compare the important items that contribute to global climate change. The PEIS should be modified and supplemented to include a comparison of the storage and disposition alternatives as they impact global climate change.

Two primary measurable and deterministic items that are very useful measures for the contribution of any action with regard to global climate change are: 1- net energy consumption and 2- net carbon dioxide releases. Calculations can be made, with deterministic values, for both of these items.

Attachment A and Attachment B of the PEIS Summary provide what is referred to as a Comparison of Environmental Impacts for each of the No-Action, Long-Term Storage and Disposition Alternatives. The twelve distinct environmental impact measures do not identify specifically the deterministic items that reveal the impact on global climate change. While the Department may believe it has included such environmental impacts within the listed measures, it is not apparent, nor does it distinctly identified the overall environmental impact related to this major environmental concern of the upcoming century. Clearly, a distinct and specific recognition of environmental impact on global climate change is essential to provide a complete environmental evaluation and comparison of each comprehensive alternative for such an important Federal action.

A deterministic assessment of the important items of net energy consumption and net carbon dioxide releases, that relate directly to global climate change, is not provided with these comments. However, a brief outline and relative indication of impact is provided on page 4 as an

01 00 00 Comment Number 1

The effluents and releases from facilities described in the reasonable alternatives section in the PEIS do not include emissions that would substantially contribute to a global climate change.

1/01.00.00

M-055

MILLS, LORING E., STEVENSVILLE, MD
PAGE 2 OF 4

attachment for reference purposes. All alternatives and process steps, other than disposition through nuclear power plant systems, are net energy consumers and will result in additional carbon dioxide releases, adversely impacting global climate change. It can be argued that the use of weapons-usable materials in all four of the reactor fuel alternatives will result in a substantial net energy production, rather than consumption, and a corresponding reduction in carbon dioxide releases. Perhaps in the cases of existing LWRs and CANDU reactors the weapons-usable material would simply replace uranium fuel and while there is a net energy production, there would not be a decrease in carbon dioxide releases. On the other hand, since the Department's energy forecast models gradually phase out nuclear energy production when existing nuclear energy units have completed their economic life, if the Partially Completed LWRs and Evolutionary LWRs alternatives were used to consume the weapons-usable material, clearly there would be a substantial net energy production and a significant reduction in carbon dioxide releases. The Department should proceed with a detailed determination of these items and include separate environmental impact measures related to global climate change.

2/09.00.08

The Environmental Impact Tables in Attachments A and B of the Summary provide isolated impacts for individual functions and do not provide a combined set of functions that are required for specific alternatives, along with the net environmental impact of each complete alternative. As an example, to perform disposition through Vitrification, it requires Pit Disassembly/Conversion, Plutonium Conversion, Vitrification, Final Disposal and the environmental impacts of the energy production facilities supplying energy for these functions. The EIS does not combine these functions into a set of environmental impacts for a system that would be required for disposition by vitrification. Such a combined total environmental impact should be identified for each complete alternative in addition to the individual functions. Similarly, disposition through the use of Evolutionary LWR should include the combined environmental impacts of Pit Disassembly/Conversion, Plutonium Conversion, MOX fuel fabrication, Evolutionary LWR and Spent Fuel Disposition. The net combined impacts are essential to properly assess and compare the alternatives. Each complete alternative should be identified with its combined net environmental impacts for the life cycle of the task.

2/09.00.08
cont.

A more complete discussion is needed within the PEIS to effectively describe the weapons-usable fissile materials. High-Enriched Uranium and Plutonium are unique material in several ways. The PEIS should provide a full listing of the physical, chemical, radiological and potential energy attributes of each material along with a discussion on the potential impacts of each attribute. Specifically, the heavy metal characteristics and related potential toxic aspects should be discussed. A complete discussion of the radiological characteristics and potential radiological impacts along with the known means of shielding and personal protection should be included. In addition, the equivalent potential energy content of these materials should be identified and discussed. Since the primary means of using the potential energy values within these materials is through the production of electricity, the measure could be established as equivalent mega-watt hours, or equivalent barrels of petroleum, or tons of coal that would be required to produce the same amount of electricity that can be produced with the potential energy of these materials. These attributes and characteristics should be included in a basic discussion of the weapons-usable fissile materials within the PEIS.

3/09.09.08

09 00 08 Comment Number 2

Attachments A and B of the Draft PEIS have been deleted for the Final PEIS Summary, but still appear as tables in Section 2.5 of the Final PEIS. In response to the comments received, the Summary has also been revised to include impact analysis results for combined alternative functions.

09 09 08 Comment Number 3

The general discussion of the radiation mechanism and radiation human health effects are included in Section M.2. The major human health effect from radiation would be an induction of cancer fatalities, which is a common effect for any radionuclide. Therefore, inclusion of detailed discussions of each specific radioactive material is not necessary. For hazardous chemicals, since each chemical may cause different ill-health effects, complete information on the toxicity profiles of the hazardous chemicals involved in the Fissile Materials Disposition Program is described in the Section M.3.

MILLS, LORING E., STEVENSVILLE, MD
PAGE 3 OF 4

08 03 01

Comment Number 4

The Department of Energy acknowledges the commentator's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

An issue of concern with regard to the alternatives of using partially completed and evolutionary LWR systems to consume the plutonium, is whether there is a need for additional electricity production capacity. Clearly, new production capacity will be required for the national system within the time period of disposition. Every year since 1975, the demand for electricity within the U.S. has increased, at a slower rate than prior to 1973. Also, the average age of existing electricity production facilities is increasing nearly one year for each year of time. Many of the existing facilities are becoming worn out and need to be replaced soon. Without question, new electricity production facilities are needed and will be built within the next ten years. Thus, the completion of partially completed LWRs and/or the construction of evolutionary LWRs are reasonable alternatives for the necessary additional electricity production capability. They would displace new facilities using fossil fuels and result in a significant reduction in CO₂ releases—affecting global climate.

Thank you for the opportunity to provide comments on the Draft PEIS for this important Federal action.

Sincerely,


Loring E. Mills

4/08.03.01

M-055

MILLS, LORING E., STEVENSVILLE, MD
PAGE 4 OF 4

Attachment to Comments by Loring E. Mills on the Storage and Disposition of Weapons-Usable
Fissile Materials Draft Programmatic Environmental Impact Statement - Dated February 1996

Brief Outline and Comparison Of Environmental Impact Measures
For Plutonium Disposition Alternatives
Affecting Global Climate Change
Net Energy Consumption and Net Carbon Dioxide Releases

	Net Energy Consumption*	Net Carbon Dioxide Release*
Pu Dissassembly/ Conversion	MWh and Fossil Fuels Consumed	Net CO ₂ Release
Pu Conversion Fac.	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Direct Disposition	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Ceramic Immobilization/ Borehole	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Borehole Complex	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Vitrification	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Ceramic Immobilization	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Electrometallurgical Treat	MWh and Fossil Fuel Consumed	Net CO ₂ Release
MOX Fuel Fabrication	MWh and Fossil Fuel Consumed	Net CO ₂ Release
Existing LWR	MWh Produced & Fossil Fuel Consumed	No Change (replaces U fuel)
Partial Completed LWR	MWh Produced & Fossil Fuel Consumed	Significant Reduction in Net CO ₂ Release
Evolutionary LWR	MWh Produced & Fossil Fuel Consumed	Significant Reduction in Net CO ₂ Release
CANDU Reactor	MWh Produced & Fossil Fuel Consumed	No Change (replaces U fuel)

* Values should include the construction of facilities and the total life cycle amount
involved with the consumption of all surplus weapons-usable materials

MILLS-REKDAL, SHEILA, ET AL.
PAGE 1 OF 3

April 22, 1996

To the United States Department of Energy
Office of Fissile Materials Disposition
P.O. Box 27786
Washington, D.C. 20039-2776

In a democracy the voice of all people should be heard and considered in decision-making when policies so greatly affect generations. Being concerned with the preservation of future America, I am extremely troubled by the Programmatic Environmental Impact Statement prepared for the Department of Energy regarding Storage and Disposition of Weapons-Usable Fissile Materials.

Although I recognize the need to secure safe, secure, long-term storage and disposition of the significant quantities of surplus fissile materials, which include plutonium (Pu) and highly enriched uranium (HEU), I believe that document fails to address very critical life issues.

In reviewing the alternative for the possible future of Pu, it becomes very evident that all of the nation's weapons-usable plutonium and in active worldwide would be stored at Pantex - 20,000 pits, plus much of the plutonium now at Rocky Flats Plant, Colorado; Hanford, Washington; Los Alamos, New Mexico; Savannah River, South Carolina; and the Idaho National Engineering Laboratory.

Before 1989, plutonium pits were never stored at Pantex. However, with the closing of Rocky Flats, Pantex is the nation's storage site for at least 12,000 pits. Now this document proposes not only storing plutonium pits, but other more undesirable forms of plutonium.

Once stored at Pantex, this site is being considered for a plutonium pit dismantling/conversion facility to cut the pits and process them into metal or oxide; a plutonium conversion facility to process other types of Pu; a facility to mix plutonium with uranium to make mixed oxide fuel (MOX); nuclear power reactors to use the MOX fuel, plus storage of the spent fuel from the reactors, as well as storage of all the mixed waste generated from all these processes. It is processing of plutonium which has contributed to the national environmental degradation which makes our nation with a \$300 billion dollar cleanup problem.

This document states there would be few negative effects from doing any and all of these activities at Pantex. What the document fails to address is the impact of the poor reputation of our agricultural products. Agriculture is the one industry which has consistently sustained the Panhandle for decades.

The food chain begins here in the prime agricultural farmland of the Texas Panhandle. The most products and cereal grains produced here are shipped throughout the world; 25% of the nation's beef is produced and processed here. The quality and wholesomeness of these products would be placed in jeopardy with the siting of these processes at Pantex. Without production agriculture this part of Texas would cease to exist. When one of every four people is employed in an agriculture related job, the loss to this High Plains trade area of those jobs would create untold problems.

A second issue the document fails to address is the location of Pantex above the Ogallala aquifer, the source of groundwater for the plains of Texas and most other Midwestern food producing states. With high explosive, chemical, advanced and radioactive materials, Pantex has contaminated the title ground layer of water bearing sandstone and limestone aquifers. With the downward migration of the recharging waters, how long will it be before the Ogallala itself will be contaminated?

Water and agriculture are the real wealth of the Texas Panhandle. Without them there would be no "Texas Panhandle." We cannot stand by and allow these resources to be compromised in any way. Food is the most important commodity we have - it must be protected.

Not all alternatives for siting these processes at other sites were analyzed in this document. Before choosing a preferred alternative, other options need to be considered. The siting of these machines at Pantex seems straightforward and ill-considered. The environmental impact in conjunction with these processes has the potential to devastate this food producing region.

The Panhandle is too valuable to be used as a plutonium storage, processing and waste facility.

Sincerely,
Sheila Mills-Rekdal
Randy Rekdal
Andrew Rekdal
Ellen J Mills

1/09.00.04

1/09.00.04
cont.

2/08.03.01

M-078

09 00 04 Comment Number 1

Radiological and chemical releases resulting from the Proposed Actions for normal operations would be within Federal and State regulatory limits. Therefore, the quality of agriculture in the Panhandle would not be affected, and agriculture-related employment in the Panhandle region would remain unaffected.

Also, current and future operations at Pantex are not expected to affect the water quality of the Ogallala Aquifer. However, since this aquifer is being depleted (that is, the current withdrawal is exceeding the current recharge), and since Pantex operations contribute to the depletion of the Ogallala Aquifer, impacts to the aquifer were analyzed in the PEIS.

Current and future operations at Pantex are not expected to impact the soil used for agriculture and farming in the Pantex region. All activities will be limited to Pantex and any impacts to the surrounding areas are within Federal, State, and local regulatory limits.

The PEIS includes analyses on the radiological and chemical impacts to workers and the public from both normal operations and accidents. These analyses also address the effects to local plant and animal resources as well as the effects on prime farmland.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 04 00 Comment Number 3

Combined storage of pits and non-pit Pu at the Manzano WSA was originally eliminated as a reasonable alternative in the Draft PEIS. After considering separate storage of pits from non-pit Pu, the option to store these pits at the Manzano WSA no longer appears unreasonable. The Manzano WSA was evaluated in the Pantex EIS and Section 2.1.3 of the Final PEIS. The Final PEIS was revised to clarify the consideration of the Manzano WSA for combined storage, and a description of the WSA was included in Appendix P.

4/29/96

To Whome it May Concerns;

Question: Who derived the most monetary profit from Rocky Flats?

Question: Who is paying for clean up?

Basic premise learned from parents:
You make a mess you clean it up, even if it means no dinner.

That is why it is so very important that this decision be made with the utmost caution and foresight. Projects of this magnitude have no place in the small ball park of political favoritism, cronyism, or any other-ism. This is too deadly a subject to be used as a political football.

This is not just a question of "not in my back yard," it is a question of where can this facility be located that it will have the least impact on the environment - socially, ecologically, ~~and~~ it seems the Manzano site at Kirkland AFB would be a much safer site - security wise as well as it is not in an agricultural zone of the same proportion. It
(over)

3/01.04.00

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MILLS-REKDAL, SHEILA, ET AL.
PAGE 3 OF 3

appears to have been a storage facility with the capability to store 30,000 pits. It would certainly seem more practical than Carson county.

I sincerely hope reason prevails in this matter, & that political money grubbing is site tracked for the practical plutonium train to find it's home stations.

Sincerely,

We are the
Caretakers of this
Planet!

3/01.04.00
cont.

M-078

MINER, RUTH ALLAN AND MENDELSON, EMANUEL S.,
 PHILADELPHIA, PA
 PAGE 1 OF 1

48 W. Highland Avenue
 Philadelphia, PA 19118-3310
 June 7, 1996

U.S. Department of Energy
 Office of Fissile Materials Disposition
 P.O. Box 23786
 Washington, DC 20026-3786
 Fax 1-800-820-5156

We vigorously oppose any and all steps to continue the production of nuclear fuel and object strenuously to the mixed oxide method of blending plutonium and uranium—the MOX process—for use in commercial reactors. This process not only involves building reprocessing facilities and altering existing reactors at public expense but will increase volumes and radioactivity of the waste produced.

The U.S. Government, primarily responsible for the spread of nuclear materials worldwide, is now reaping the whirlwind. It is time to set another example: Stop producing radioactive waste in every way possible before another fatal holocaust occurs that can destroy us all. We hold the U.S. Government responsible for contemptuous treatment of human life. It is time to turn in a new direction.

Stop processing radioactive materials for military and energy use and stop producing nuclear waste.

Ruth Allan Miner
 Ruth Allan Miner

Emanuel S. Mendelson
 Emanuel S. Mendelson

1/08.03.01

2/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

F-064

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MONTEREY, CA, TARIQ RAUF
PAGE 1 OF 7

Date: Wed, 1 May 1996

Subject: FORUM Form - incoming

serial_no = 165

MailTitle = FORUM Form - incoming

name = Tariq Rauf

title = Director IONP/CNS

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city = Monterey

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ctype = public

subject = WPu Disposition

** The following is the text of the Author's Comment.

MEGATONS TO MEGAWATTS:
ELECTRICITY FROM THE COLD WAR'S LEGACY

by

Tariq Rauf

The world's seven most advanced industrial countries -- the Group of Seven (G-7) -- will be meeting at the Moscow Summit on Nuclear Safety and Security, on 19-20 April, together with Russia to discuss the safety of Soviet-designed nuclear power reactors and the safe disposal of nuclear materials from dismantled nuclear warheads.

The Problem

With the end of the Cold War and the collapse of the former Soviet Union, far reaching nuclear disarmament agreements are resulting in the dismantling of thousands of nuclear warheads. By the turn of the century some 30,000 atomic bombs will have been dismantled, yielding hundreds of metric tonnes of weapon-grade fissile (or nuclear) materials -- highly enriched uranium (HEU) and

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plutonium. Ironically, the fissile materials from dismantled warheads will still continue to threaten humanity through the dangers of nuclear terrorism, theft, accidents, or re-use in new warheads. This is particularly true in Russia, where centralized control and physical security of nuclear materials remain woefully low and former Communists and nationalists are rising in popularity.

While both HEU and plutonium can be utilized to make nuclear warheads, there are two important differences between them. The first is that HEU can be diluted with other isotopes of uranium to yield low-enriched uranium (LEU), which cannot sustain the fast-neutron chain reaction required for a nuclear explosion. LEU is the fuel for most of the world's nuclear power reactors, but heavy water reactors such as the Canadian (deuterium-uranium) or CANDU reactors use natural uranium. Re-enriching LEU to weapon-grade or HEU requires complex enrichment technology, which is both costly and not easily accessible. Plutonium, in contrast, cannot be diluted with other isotopes of plutonium to render it unusable for weapons. It must either be burnt in nuclear reactors, or placed in long-term storage — an unproved technology — with all the attendant risks of theft or accident (particularly in Russia).

Recognizing the risks of poorly guarded weapon-grade nuclear materials in Russia, the United States is buying 500 tonnes of weapons-grade uranium from dismantled Russian warheads and is using the uranium after dilution as fuel in its commercial power reactors. The danger from Russian weapon-grade plutonium still remains to be addressed.

Disposition Options for Weapons Plutonium

Expert studies commissioned in the United States recommend four principal options for short- to medium-term management of excess weapons plutonium: none of these options eliminate the danger, all they can achieve is to reduce the risks. Moreover, these options do not reduce the inventory of excess weapons plutonium.

Plutonium disposition options need to:

- minimize the time that plutonium is stored in forms readily usable for nuclear weapons;
- preserve safeguards and security during the disposal process, while maintaining the same high level of security and accounting applied to nuclear weapons in storage, i.e. the "stored weapons standard";
- render plutonium into a form which is as difficult to recover for making nuclear weapons as is contained-plutonium in spent fuel from nuclear reactors, i.e. the "spent fuel standard"; and
- meet the highest standards for public and worker safety, as well as environmental protection.

E-007

Several options can be considered for achieving these objectives. Exotic options such as sending the plutonium into the Sun (for incineration) or into deep space aboard rockets, or using surplus nuclear warheads to destroy asteroids in space (on projected collision paths with Earth), or underground nuclear explosions to also incinerate other hazardous materials (including chemical weapons), or sub-seabed disposal, or dilution in the open ocean, or disposal in the Earth's magma, can all be ruled out as either they do not meet the basic requirements of human and environmental safety or are inimical to existing arms control processes. Viable options include:

fabrication and use as mixed-oxide (MOX) fuel, without reprocessing, in existing or modified nuclear power reactors; vitrification, that is combining the plutonium with high-level radioactive wastes as these are melted into large glass logs for long-term underground storage; and geologic disposition or burial in deep boreholes – the last two options require further study.

These options are currently under consideration in the United States and Russia. The principal concern is to prevent accidents and the misuse of plutonium in an unstable Russia, and to find ways acceptable to Russia for safely and securely disposing of this material. Until recently, Russia regarded the plutonium as having an economic value and thus was not amenable to plutonium disposition. However, after visiting Canada last October, Russia's minister for atomic energy, Viktor Mikhailov, is now considering ways of dealing with excess weapons plutonium including Canadian assistance.

1/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support for the disposition alternatives. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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08 03 01 Comment Number 2

The Department of Energy acknowledges the commentator's support for the CANDU Reactor Alternative. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Reactor Burn up of Plutonium

Plutonium after it has been mixed with depleted uranium can be used in commercial power reactors, in the form of mixed-oxide (MOX) fuel. Many of the world's existing light-water reactors (LWRs) could use MOX fuel, but because of their particular design they can be refuelled only after costly and sometimes lengthy shutdowns. Given the poor safety culture and weak nuclear security in Russia, it would not be desirable to encourage plutonium storage or use in Russia given the high risks of accidents and theft. Japan and Western Europe also would not be suitable on a number of grounds, including lack of political acceptability (as far as both the US and Russia are concerned) and for non-proliferation reasons because of their plutonium reprocessing programs. This leaves Canada as the only potential candidate acceptable to both Russia and the US to assist in plutonium disposition.

Canadian CANDU Reactors

Canada's (deuterium-uranium) CANDU reactors offer the best technical possibility for the mission of eliminating weapons plutonium, because the reactor design inherently allows for the handling of full-MOX cores and would involve no change from the usual physics of the reactor. CANDU reactors are refuelled on-line, that is, they do not have to be shut-down for refuelling as do LWRs. Further, CANDUs use a "once-through" fuel cycle which, in principle, would make them an efficient burner of MOX derived from weapons plutonium; and the fissile content would be burned down to a lower level than in a LWR, with the extraction of more energy per kilogram of plutonium. CANDU fuel is produced in smaller and simpler units than those typical of LWRs, thus potentially reducing the cost of fuel fabrication, which is a substantial fraction of the total cost of MOX use. CANDU reactors have the best safety record in the world – there are 21 CANDUs operational in Canada. Recently, a CANDU reactor, operated by Ontario Hydro, set a world record for continuous operation and electricity production. Atomic Energy of Canada Limited (AECL), the designer and builder of CANDU reactors is experienced in dealing with MOX fuels and is in a position to supply technical expertise in support of plutonium burn up in CANDUs. The CANDU option meets all of the criteria for safe and effective plutonium disposition.

Two of the current standard design CANDU reactors could transform 50 metric tonnes of Russian weapons plutonium into spent fuel in 25 years. Another two CANDU reactors would be needed to burn up a matching 50 tonnes of excess US weapons plutonium. The Bruce Nuclear Power Plant in Ontario, located on Lake Huron north-east of Detroit, has eight operational power reactors, of which two or four could be used to burn excess weapons plutonium, as soon as MOX from

2/08.03.01

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MONTEREY, CA, TARIQ RAUF
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excess weapons plutonium becomes available. MOX fuel burned in Canadian CANDUs would be fabricated as fuel either at a suitable facility in the US, or in Russia, before being transported to Canada. A new fuel bundle design, under consideration, could reduce the number of MOX fuel bundles by nearly 50 percent, thus making for a significant economic and transportation advantage.

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Transportation

Existing modes of road and rail transportation could be used to bring MOX fuel bundles into Canada from the US. In effect, the "safe, secure transports" (SST) routinely used to ship containers of special nuclear materials within Canada and the US could be used for MOX. Shipments of MOX fuel bundles in special containers from Russia could be done safely and efficiently by either commercial or military transport aircraft.

Environment, Health, and Safety

Instead of mining and refining some 6,000 tonnes of uranium per year, the use of MOX would consume 2 tonnes of weapons plutonium together with some 250 tonnes of depleted uranium waste. The amount of spent fuel produced would decrease by about 10% over the use of natural uranium. While plutonium products cause anxiety about health and safety considerations, it is often forgotten that very much greater quantities of permanently toxic elements such as arsenic, cadmium, and lead are stored and disposed of with much less concern. While plutonium compounds are both fissile and toxic and must be stored and handled with care, epidemiological studies have not demonstrated adverse health effects in humans.

Canada's Role

Though Canada was a member of the war-time Manhattan Project to develop an atomic bomb, it was also the first country to voluntarily give up its expertise and capability to develop nuclear weapons and since then it has consistently and actively contributed to preventing the spread of nuclear weapons and reducing the nuclear danger.

The potential use of Canadian CANDU reactors to help in the safe and efficient disposition of one of the Cold War's most enduring legacies – long-lived weapon-usable fissionable materials – offers a unique opportunity to make a significant contribution to making the world a safer place by converting megawatts to megawatts.

[Tariq Rauf (a specialist in Canadian and international security) is currently Director of the International Organizations and Nonproliferation Project at the Monterey Institute of International Studies in California.]

E-007

**MONTEREY INSTITUTE OF INTERNATIONAL STUDIES,
MONTEREY, CA, TARIQ RAUF
PAGE 7 OF 7**

Monterey: 31 March 1996
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END comment

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E-007

01 06 00 Comment Number 1

The United States is not likely to proceed significantly with Pu disposition unless Russia takes reciprocal action simultaneously. Both the United States and Russia have inventories of Pu, surplus to defense needs. The United States is retaining necessary quantities of Pu under the Stockpile Stewardship and Management Program to guarantee that future defense needs of the Nation are assured.

01 06 00 Comment Number 2

Comment noted. IAEA considerations are not a part of the environmental analysis. However, IAEA is considered in the technical and nonproliferation analysis and will be integrated in DOE's decisionmaking process.

April 30, 1996
David Montgomery
(206) 342-1349 work
(360) 783-3583
35825 164th St. SE.
Sultan, WA 98294

DISPOSAL OF U S PLUTONIUM

The Clinton administration has put 50% of all our plutonium under the inspection control International Atomic Energy Agency (an agency of the U.N.). The Department of Energy is now taking input on what to do with this plutonium. A meeting will be held in Seattle on Tuesday April 30, 1996 (flyer included). This is sponsored by the Department of Energy, Department of ecology and various disarmament organizations. It is important to get public input on various plans for this plutonium.

There are several problems with this plan.

1) We are the only nuclear power that is disposing of it's plutonium from the weapons program. This material produced at great cost over the years and it is now being disposed of in a way that will be subject to the cold war may be needed again when the next presidential elections in Russia this June. This option of reassembling nuclear weapons should be available to the next President.

2) The current operation of the U.S. inspection of U.S. nuclear materials, which were initiated by President Clinton has justified these inspections based on the U.S. inspection of the U.S. nuclear materials. The U.S. has no intention to achieve universal nuclear disarmament. It is noted that when President Bush submitted the Non-Proliferation Treaty to the U.S. Senate he stated it would prohibit the International Atomic Energy Agency from any inspections dealing with our national security. The treaty has not been modified to allow these inspections.

1/01.06.00

2/01.06.00

David R. Montgomery

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MONTGOMERY, DAVID, SULTAN, WA
PAGE 2 OF 2

[8] Feb. 4 Public Papers of the Presidents

intelligence and deep sense of compassion made an indelible impression on all who knew him.

Mrs. Nixon joins me in extending deep sympathy to his wife and family.

born: Mr. McGill died on February 4 in Albany, Ga., of heart failure at the age of 89. Since 1949 he had been editor and chief publisher of the Atlanta Constitution. In 1968 he won the Pulitzer Prize for editorial writing.

29 Message to the Senate Requesting Advice and Consent to Ratification of the Treaty on Non-Proliferation of Nuclear Weapons. February 5, 1969

To the Senate of the United States:
After receiving the advice of the National Security Council, I have decided that it will serve the national interest to proceed with the ratification of the Treaty on Non-Proliferation of Nuclear Weapons. Accordingly, I request that the Senate act promptly to consider the Treaty and give its advice and consent to ratification.

I have always supported the goal of halting the spread of nuclear weapons. I opposed ratification of the Treaty last fall in the immediate aftermath of the Soviet invasion of Czechoslovakia. My request at this time in no sense alters my condemnation of that Soviet action.

I believe that ratification of the Treaty at this time would advance this Administration's policy of negotiation rather than confrontation with the USSR.

I believe that the Treaty can be an important step in our endeavor to curb the spread of nuclear weapons and that it advances the purposes of our Atomic Energy

Peace program which I have supported since its inception during President Eisenhower's Administration.

In submitting this request I wish to convey the commitment made by the previous Administration that the United States will, when safeguards are applied under the Treaty, permit the International Atomic Energy Agency to apply its safeguards to all nuclear activities in the United States, exclusive of those activities with direct national security significance.

I also reiterate our willingness to join with all Treaty parties to take appropriate measures to insure that potential benefits from peaceful applications of nuclear explosions will be made available to non-nuclear-weapon parties to the Treaty.

Consistent with my purpose to "strengthen the structure of peace," therefore, I urge the Senate's prompt consideration and positive action on this Treaty.

RENDON NIXON

The White House
February 5, 1969

M-215

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

1/08.03.01

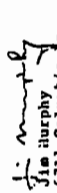
I am Jim Murphy and I have been an Amarillo resident since 1977. I am active in a variety of community organizations and am on a number of boards including a local public school board.

I am here tonight to respectfully express an emphatic "No!" to any expansion or added roles at Pantex that include plutonium processing or nuclear waste storage. Although such expansion or new "missions" may have some positive economic benefits for the area, there would be economic risks as well.

At any rate, it is apparently necessary to occasionally reiterate that there are some things that money can't buy and some things in life that are more important than economic bottom lines.

I count amongst these things a safe and clean environment for our traditional agricultural and cattle-raising industries and ways of life, a clean aquifer and a safe and healthy environment for our children and grand children. Plutonium processing and/or nuclear waste storage are hostile and unfriendly to those environments and ways of life and not worth whatever the price may be.

The tantalizing apple of prosperity beckons; but when it is the fruit of the plutonium tree, we best look elsewhere.


Jim Murphy
6711 Columbia Ln.
Amarillo, TX 79109
4-22-96

TX-056

MURRAY, ALEXANDER P., GAITHERSBURG, MD
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24305 Clematis Drive,
Gaithersburg, MD 20882,
May 3, 1996.

DOE - Office of Fissile Materials Disposition,
c/o SAIC PEIS,
P.O. Box 23786,
Washington, DC 20026-3786.

Re: DOE/EIS-0229-D, Storage and Disposition of Weapons-Usable
Fissile Materials Draft Programmatic Environmental Impact
Statement, dated February, 1996.

Dear Sir/Madam:

Thank-you for the opportunity to comment upon the subject
environmental impact statement. The PEIS covers an important area
that DOE needs to address with a reasonable alternative (or
alternatives) in a timely manner with cost effective means. My
comments follow:

1. The alternatives are of different categories and need to be
clarified and explained better. For example, the long-term
storage alternatives are site variations, while the
disposition alternatives include disposal, wasteform, and
reuse variations. The draft EIS should try and follow the
classic categories of storage, reuse/recycle, and disposal.
These should be displayed graphically and show endpoints
(e.g., plutonium disposal site, Federal repository). There
may also be other subcategories based on Plutonium/HEU form
and facilities (e.g., igloo, bunker, vault). The analyses
also should accommodate the fact that reactor alternatives are
reuse options producing a valuable resource; usually EIS's
include the value of the resource (avoid latent fatalities,
say by avoidance of emissions and consumption of other
resources) or use a difference type analysis. Ideally, this
should be summarized in a table in the Summary.
2. The proposed action is stated to consist of long-term storage
and disposition (i.e., the two main categories of
alternatives). This is contradictory and confusing. While
DOE often defers the specific preferred/proposed action to the
final EIS, the proposed action is usually more definitive than
the two principal categories of alternatives. DOE needs to
pick one or the other, and the text should be modified to
reflect that choice.
3. The draft does not adequately discuss the type of plutonium.
This includes physical (e.g., pit, classified shape,
unclassified shape, billet, powder) and chemical (e.g., metal,

01 00 00 Comment Number 1

Comment noted. The Final PEIS text format is the same as that suggested, and
information requested is already in the text (Chapter 2). As described in
Appendix H of the Final PEIS, DOE is still evaluating the suitability of a
repository site. An expanded discussion of avoided environmental impacts
has been included in Section 4.9 of the Final PEIS.

01 00 00 Comment Number 2

Separating storage from disposition would not effectively meet the purpose of
and need for the Proposed Action. Planning for storage of the surplus Pu
pending disposition is closely related to that for the disposition activities and
would be affected by the technology(ies) selected to implement the Proposed
Action. DOE is confident that a decision can be made on disposition
technologies at this time, and is continuing to expand a range of small scale
tests and demonstrations of some Pu disposition technologies to remove
uncertainties in viability.

01 04 00 Comment Number 3

Most of the Pu addressed in the PEIS is in either a metal or oxide form. Some
of the Pu metal is in a classified pit form. The form, shape, and location of the
Pu materials does not have a major bearing on the technologies chosen for
disposition or the siting of those technologies. Although some of the Pu has
chemical or isotopic constituents that would make it unsuitable for use in
MOX fuel, it is a relatively small amount of the total Pu inventory. The
immobilization technologies could be used for disposition of all forms of Pu.

1/01.00.00

2/01.00.00

3/01.04.00

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MURRAY, ALEXANDER P., GAITHERSBURG, MD
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oxide, ceramic, glass, impurities) forms. This is important because it can affect the viability of certain alternatives vis-a-vis others, and should be discussed better.	06 01 08 Comment Number 4	Comment noted. The Final PEIS was revised to reflect comments received.
4. The EIS appears partial against the reactor and MOX option by including old data and omitting actual operating results. Presented reactor and fuel characteristics in the EIS appear to be from the 1970's and are completely out of date. The EIS presents cases that would imply lower throughputs and longer completion times with a reactor MOX option as compared to the other options. This is an artifact of the writers' assumptions and contradicts actual experience (i.e., the writers assumed 2-4 reactors, but Europe currently has some 20 reactors licensed and burning MOX, and the United States currently has some 100 plus reactors running, with several utilities willing to investigate MOX cycles with the government). The text includes several misleading and/or incorrect statements: - For MOX use, you don't convert the reactor, you change the fuel. The text should also mention 30% versus 100% MOX use (the latter is essentially the uncompleted LWR alternative). - The evolutionary/advanced LWR designs plan to use LWR fuel like current reactors. Use of MOX constitutes the same option as for current reactors, although a new reactor of any type can be tailored for MOX use. - The use of terms like "pay a premium for such MOX fuel" should be explained and referenced - European experience indicates comparable or slightly lower costs with MOX usage. - The text should also explain the scheme assumed - 30% vs. 100% load etc. (the text implies 100% is used for all of the reactor options). Furthermore, the reactor-MOX alternative is the only option with an analogue operating on an industrial scale, under full IAEA safeguards and external regulatory practices. The correct facts on the reactor-MOX option need to be included in the EIS so that the public and the policy-makers are informed with current, accurate information and practices.	06 01 08 Comment Number 5	Comment noted.
5. The experience of the Europeans and other countries with plutonium disposition is essentially neglected by the EIS. The EIS incorrectly states that Europe (Euratom facilities) has no "excess" MOX capacity. Europe has selected the reactor-MOX option for civilian plutonium, and is recommending the same route for excess weapons-usable fissile materials. To date, some 400 tonnes of MOX fuel, containing some 20 tonnes of plutonium, have been manufactured and irradiated in reactors. Over twenty commercial nuclear reactors in Europe are currently licensed and using MOX fuel. Europe currently has an operating MOX fabrication capacity of over 100 te/yr as MOX (about 6-7 te/yr as plutonium). The Europeans have built two new facilities (Melox and SMP) which are increasing the MOX capacity to close to over 300 te/yr. Both facilities have	5/06.01.08	M-150

MURRAY, ALEXANDER P., GAITHERSBURG, MD
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space for an additional line of some 50-60 te/yr each and have offered this space (for a fee of course) for disposition of excess weapons-usable fissile materials via MOX fabrication and burning in power reactors. Capacity does not appear to be a limiting factor, and the report should reflect this. All of these facts need to be included in the EIS, perhaps as a separate section. The EIS should also discuss the use of the European experience in the U.S., such as by construction of a Melox or an SMP in our country, or use of European-MOX experience in licensing reactors.	5/06.01.08 cont.	Comment Number 6
Furthermore, the reactor-MOX option produces a benefit (electricity and less resource usage), isotopically modifies the plutonium so it is essentially useless for weapons, and renders it self-protecting (the ANS has issued a white paper making these points and supporting the reactor-MOX approach). It also destroys a significant percentage (50% plus) of the original plutonium. None of the other alternatives has these benefits. This discussion is not included in the text, but should be included in the final EIS.	6/06.01.08	Comment Number 7
Some form of "stabilization" is needed for long-term storage; this is only briefly mentioned in the text. It is unlikely that fifty-year storage of pits will be "acceptable" to the public, to the IAEA, and to arms control treaties. "Stabilization" will probably constitute the greatest fraction of the storage impacts. Stabilization for storage may also be a subset of stabilization for disposition. This needs to be discussed in the text.	7/02.00.08	Comment Number 8
The draft suffers from the "build new things" syndrome, particularly for the consolidation alternative. Existing facilities do not seem to receive equal consideration. Existing would speculate that there is probably adequate room in FMEP for all of the material (I note that FMEP is heavily shielded and should not require any additional shielding). There are also other facilities within DOE that are not even mentioned. These include DAF, E-MAD, and R-MAD at NTS, and the TAN and ICPP areas at INEL. The Barnwell plant adjacent to the SRS also has large vaults and cells suitable for plutonium/HEU storage and/or processing. These should be mentioned (they are viable facilities for operations that would be required under this EIS). The EIS should also distinguish between facilities that are suitable but need equipment and new facilities - 75-80% of the time and costs are associated with the building, not the equipment.	8/01.02.00	Comment Number 9
Information on LANL and LANL facilities is not included, but is stated to be added to the final EIS. Usually, sites not mentioned in the draft do not show up in the final EIS.	9/01.04.00	Comment Number 10
It seems reasonable to exclude U-233 from this EIS. However, the stated reasons appear to refer to nonpurified and irradiated U-233, not to pure U-233, and could also be applied	10/01.04.00	
M-150		

06 01 08 **Comment Number 6**
Comment noted.

02 00 08 **Comment Number 7**
A basic assumption for this environmental analysis is that the materials are already in a stabilized form before they are received for storage. Actions taken for materials stabilization are covered by analyses under the Environmental Management Program.

01 02 00 **Comment Number 8**
The Department of Energy looked at many of the facilities you mentioned in assessing the Upgrade at Multiple Sites Alternative. These facilities must meet the selection criteria which include cost-effectiveness, timeliness, and technical viability, and the facilities would not be used for other missions. For example, the FMEF is included as a reasonable alternative at Hanford.

01 04 00 **Comment Number 9**
One and one-half tons of Pu material located at LANL was designated as surplus. None of the Pu material located at LLNL has been designated as surplus. Although LANL is not a candidate site for either long-term storage or disposition of surplus Pu, it is analyzed in the Final PEIS under the No Action Alternative since this material would remain at LANL. The Draft PEIS mentions that the LANL No Action Alternative for storage would be addressed in the Final PEIS.

01 04 00 **Comment Number 10**
The Department of Energy continues to maintain the same position presented in the Draft PEIS. Since uranium-233 (U-233) disposition is not ready for a decision, DOE is not currently proposing to take action on the disposition of surplus U-233, which will continue to be stored at current locations.

to plutonium. (The handling properties of purified, unirradiated U-233 are similar to HEU.) The rationale should be explained better.	10/01.04.00 cont.
11. In the EIS, the HLW repository should be referred to as the Federal repository (for spent fuel and HLW - its main function is actually for commercial SNF). Also, there should be a statement and reference for the CANDU MOX SNF staying in Canada after discharge.	11/12.00.00
12. It is unclear why the immobilization alternative has a 5 te/yr (plutonium) capacity, while the MOX plant/reactor alternative is around 2-3 te/yr (the Melox and SNF each have a capacity of 120 te/yr MOX - about 6 te/yr plutonium per plant). Capacity and schedule would appear to favor reactor MOX use. These points should be discussed, and, at a minimum, the capacity of MOX should be at least equal that of the other alternatives for consistency.	12/01.02.00
13. The EIS should elaborate upon statements such as "... no waste forms are currently licensed for disposal in an HLW repository." This is half true because the repository is not licensed. However, vitrified wasteforms are generally recognized by the regulators as being acceptable - the EPA has even determined that vitrification constitutes SDAT for HLW. These points should be brought out.	13/09.11.08
14. The site and facility sizes seem huge for the operations involved - these need to be explained and the bases presented. The basis for the one mile buffer zone needs explanation. The MOX sites in Europe do not require 2,200 acres, and the disparity needs explanation.	14/09.01.08
15. The EIS appears to be naive on spent nuclear fuel management. For example: - Dry storage technologies already exist - they don't require development. - Cooling time in the pool varies with fuel history and dry cask design; 5 years (not 10 years) is typical, and this should be pointed out in the text. - The additional SNF assemblies due to MOX is puzzling, and should be explained. The European experience indicates that the irradiation times and quantities for MOX assemblies should be the same as for LEU assemblies. - Typical fuel cycles are 18-24 months, not 12-18 months.	15/06.00.08
16. There should be a check for consistency and the use of the same bases throughout the document (e.g., time, disposition rate etc.)	16/16.00.00
M-150	

12 00 00 Comment Number 11

It is true that commercial spent nuclear fuel constitutes the majority of the waste for disposal in a geologic repository. Since this analysis assumes a hypothetical operating repository, DOE elected to refer to it as a HLW repository. Disposal options for CANDU spent nuclear fuel are discussed in Section 2.4.5.5 of the PEIS.

01 02 00 Comment Number 12

The assumptions for throughput of the various facilities are based on the lifecycle of the entire alternative, not just how fast the facility can process the materials. Analyses of the cost, schedule, and technical aspects of the various alternatives are presented in a separate document available for public review beginning in late July 1996.

09 11 08 Comment Number 13

A sentence has been added to Section H.1 of the Final FEIS to acknowledge the fact that the EPA did announce in a *Federal Register* notice in June 1990 that vitrification constitutes the best demonstrated technology available for HLW.

09 01 08 Comment Number 14

Land area requirements during operation for disposition alternatives appear to be much greater than for storage alternatives. This is attributed to the site-specific nature of the storage alternatives which incorporate the infrastructure and environmental features of the DOE analysis site versus the greenfield condition of most disposition alternatives. Additionally, the need for buffer zones would increase the total land area requirement. Since all storage alternatives would be situated on a DOE site, buffer zones are already established. The greenfield requirement for a 1.6-km (1-mi) buffer zone area would be reduced at some DOE storage sites where existing site conditions preclude compliance. Additional buffer zone areas, as part of the operations total land area requirement, would not be added to the storage alternatives.

MURRAY, ALEXANDER P., GAITHERSBURG, MD
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17. The impacts need to be verified and their consistency checked. For example, the reactor-MOX options are shown as having a high power consumption, which is incorrect because there is a large, positive power production (if you will, "negative consumption"). Some other impacts of reactor-MOX alternatives also appear anomalous (e.g., land use, LCPs). Again, a difference-type analysis focusing just on the MOX effect would be beneficial and correct.

I notice that a 60 day comment period has been allotted for this EIS. This seems unrealistically short for an EIS of this importance and inconsistent with other recent EISs, which typically allow 90 or 120 days for comments. If possible, it would be beneficial if an additional 30 days could be allowed for public comment.

The EIS has the beginnings of a good document and the comments should help the writers complete it. I greatly appreciate the opportunity to comment on this EIS, and please feel free to contact me if you have any questions.

Sincerely,

Alex Murray
Alexander P. Murray

17/06.01.08

18/08.01.00

Buffer zones relate to such issues as providing sufficient access around building exteriors to accommodate emergency vehicles, as well as open space for security patrols. Distances from facilities to the site boundaries and between facilities are based on technical, safety, and security considerations. The buffer zone is not necessarily used exclusively as open space. Some support facilities (for example, sanitary landfills or stormwater management ponds) may be located in the buffer zone. The need for buffer zones would be determined during site-specific reviews that would follow this PEIS. Siting criteria would generally follow DOE Order 430.1, *Life Cycle-Asset Management*.

As a greenfield site, the MOX Fuel Fabrication Facility Alternative would require approximately 890 ha (2,200 acres) during operation to accommodate the facility and at least a 1.6-km (1-mi) buffer zone. However, the operating facility (that is, MOX Fuel Fabrication Facility, support facilities, roads, and parking lots) would only disturb approximately 81 ha (200 acres).

06 00 08

Comment Number 15

Corrections/changes have been made to Chapter 2, Sections 4.3.5.2.10 and 4.3.5.3.10 of the PEIS.

16 00 00

Comment Number 16

A consistency check was performed on the Final PEIS as a part of the Quality Assurance Procedure.

06 01 08

Comment Number 17

Comment noted.

08 01 00

Comment Number 18

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

M-150

COMMENT FORM
These comments apply to the Storage and Disposition Draft PEIS

NAME: Joy Myers
ADDRESS: HC 62 Box 41, Dubois, ID 83423
TELEPHONE: (208) 374-5359

As the criteria against which to judge potential alternatives were based on the President's nonproliferation policy, it appears to me that nonproliferation aspects should be addressed in the Storage and Disposition Draft PEIS specifically as they relate to each alternative. Page S-5 of the Summary states: "The criteria include nonproliferation; security; environmental safety; and health, timeliness and technological viability; cost-effectiveness; international cooperation; and peaceful beneficial reuse whenever possible." Analysis of the alternatives addresses only a few of these criteria.

For instance, the Long-term Storage Alternatives all appear to violate the stated criteria. Leaving surplus fissile material in its present form and in long-term storage sets a poor example for both nonproliferation efforts and international cooperation. Would the United States be content if the former Soviet Union agreed to merely place its surplus fissile material into long-term storage? Is this really any different than stockpiling? While it is presumable that consolidation and/or collocation would help address the security criterion, such analysis is missing from the PEIS. A discussion of the cost-effectiveness of upgrading or constructing long-term storage facilities without actually eliminating surplus fissile material is also missing. No where is the preference for peaceful beneficial reuse mentioned.

Under the Disposition Alternatives, much of the above paragraph also applies to the Deep Borehole Direct Disposition Alternative. Assuredly, security considerations may be improved, but this approach is in reality merely another version of long-term storage. By using a generic site for analysis, the PEIS ignores the problems inherent in attempting to locate and open such a facility anywhere in the United States. Are areas which meet the deep borehole standards even available? Such practical and political considerations need, at least, a mention. The Deep Borehole Immobilized Disposition Alternative is an improvement, but it also neglects to consider the peaceful beneficial reuse criterion in addition to the problem of attempting to site such a waste facility.

Based on the environmental, safety and health information contained in the PEIS, the Electrochemical Treatment Alternative is clearly preferable in the immobilization category. Impacts on waste management at the INEL appear to be small; and, according to Governor Ibert's statement, surplus fissile material would be acceptable under the conditions of the Idaho Agreement if it were shipped to the INEL for treatment. The ability of this process to produce LEU from HEU has the potential for meeting both the nonproliferation standard as well as the beneficial reuse standard. In addition, the process could have the capability of immobilizing the forms of PU not suitable for MOX fabrication.

01 06 00 Comment Number 1

The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action or negotiate reciprocal actions with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD. The documents related to technical, cost, and schedule analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the Nonproliferation Policy as it relates to the Proposed Action and alternatives.

01 04 00 Comment Number 2

The intent of DOE's Proposed Action is to provide storage for the non-surplus weapons-usable fissile materials and for surplus Pu materials pending disposition, since the disposition action would take time. The impacts of the Proposed Action and reasonable alternatives on implementation of the President's Nonproliferation Policy are analyzed in a separate document in support of the ROD.

07 01 00 Comment Number 3

Cost data, along with technical and schedule data, was provided in Technical Summary Reports of both storage and disposition beginning in late July 1996.

01 05 00 Comment Number 4

Additional benefits were included in the criteria for the screening process which led to the alternatives which were analyzed in the PEIS.

04 03 00 Comment Number 5

As noted in Chapter 2 of the PEIS, identification of a suitable site for a deep borehole is beyond the scope of this PEIS. Regarding suitable geology,

F-005

Comments - Storage and Disposition Draft PEIS Joy Myers	Page 2	Based on the criteria identified in the PEIS, the best approach for disposition of surplus weapons-usable fissile material is to convert it for use in a reactor. No other alternative meets the standard of "peaceful beneficial reuse whenever possible" - and the PEIS acknowledges it is possible. Also, converting surplus weapons-usable material into reactor fuel would meet the Spent Fuel Standard and reduce proliferation risks. This will be the most likely approach in other countries, and the PEIS would benefit from a discussion of international cooperation vis-a-vis standards for and methods of disposition of fissile material.	8/06.00.08
Perhaps the largest flaw apparent in the PEIS is the reluctance of the Department of Energy to decide whether weapons-usable fissile material is or is not waste. While the PEIS states that this material is not waste, three-fourths of the PEIS treats its disposition as if it were. Immobilized disposition merely confirms it is waste. Only reuse will demonstrate that it is not.		The argument used at the workshop that utilities are "not going to pay to get this stuff ... we may have to pay them to take it" misses the point. Reuse holds the only potential for beneficial use. If payers are going to pay equally or more for the other proposed alternatives through mortgage, immobilization, and disposal costs with no prospect of return. This seems like an ideal opportunity for the Department of Energy to give some credence to the "Energy" in its title and mission.	9/01.03.00
The argument used at the workshop that utilities are "not going to pay to get this stuff ... we may have to pay them to take it" misses the point. Reuse holds the only potential for beneficial use. If payers are going to pay equally or more for the other proposed alternatives through mortgage, immobilization, and disposal costs with no prospect of return. This seems like an ideal opportunity for the Department of Energy to give some credence to the "Energy" in its title and mission.		Perhaps the largest flaw apparent in the PEIS is the reluctance of the Department of Energy to decide whether weapons-usable fissile material is or is not waste. While the PEIS states that this material is not waste, three-fourths of the PEIS treats its disposition as if it were. Immobilized disposition merely confirms it is waste. Only reuse will demonstrate that it is not.	10/01.02.00
The argument used at the workshop that utilities are "not going to pay to get this stuff ... we may have to pay them to take it" misses the point. Reuse holds the only potential for beneficial use. If payers are going to pay equally or more for the other proposed alternatives through mortgage, immobilization, and disposal costs with no prospect of return. This seems like an ideal opportunity for the Department of Energy to give some credence to the "Energy" in its title and mission.		The argument used at the workshop that utilities are "not going to pay to get this stuff ... we may have to pay them to take it" misses the point. Reuse holds the only potential for beneficial use. If payers are going to pay equally or more for the other proposed alternatives through mortgage, immobilization, and disposal costs with no prospect of return. This seems like an ideal opportunity for the Department of Energy to give some credence to the "Energy" in its title and mission.	11/07.02.00

F-005

Section 3.9.5 notes potential host rock media for a deep borehole site in the contiguous United States.

04 02 00 Comment Number 6

While the Borehole Alternative offers no potentially beneficial use of this material, this lack of access makes it difficult to divert to weapons use.

08 03 01 Comment Number 7

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

06 00 08 Comment Number 8

Comment noted.

01 03 00 Comment Number 9

The PEIS focuses on the environmental impacts of each alternative. DOE's decision process will be based on the results of the Final PEIS, together with information from technical and economic studies, national policy objectives, and public input. This process will provide the United States with the basis and flexibility to implement Pu disposition efforts multilaterally, bilaterally through negotiations, or unilaterally as an example to Russia and other nations.

01 02 00 Comment Number 10

The AEA materials (including special nuclear materials such as weapons-usable fissile materials) are excluded from the definition of solid waste under RCRA and its implementing regulations, as stated in the *Solid Waste Disposal Act*, Section 1004. Furthermore, Section 1006 states that RCRA does not apply to any materials that are subject to the AEA.

All reasonable alternatives for surplus Pu disposition analyzed in the PEIS would generate wastes. The environmental impacts of the various wastes are discussed in Section 4.3 and Appendix E.

07 02 00 Comment Number 11

Cost data, along with technical and schedule data, were provided in a Technical Summary Report for disposition beginning in late July 1996. This report included consideration for reactor fuel cost offsets that could be realized by using MOX fuel in existing reactors as a discussion of possible revenues that could be realized from the sale of electricity or steam from a new or partially completed reactor using MOX fuel and net life cycle costs.

Comment Number 1

06 01 09

Europe is moving toward a balance between the capacity to fabricate MOX fuel and the capacity to utilize MOX fuel in reactors. Additionally, Europe has excess separated Pu stores which they intend to use as MOX fuel as the fuel fabrication infrastructure and reactor infrastructure permits. Therefore, use of European reactors for consumption of U.S. Pu-source MOX fuel would merely displace the use of separated European Pu and result in no net reduction in world inventories of separated Pu. Hence, the statement that Europe has no excess MOX capacity. Additionally, facility utilization projections indicate that, while some excess MOX fuel fabrication capacity may exist in Europe for the next few years, current capacity is soon expected to be fully utilized for commercial MOX fabrication. Therefore, the United States may not be able to rely on the use of existing European MOX fabrication capacity for the entire disposition campaign. However, as a part of efforts to develop weapons-grade Pu MOX fuel, DOE is consulting with European Fuel Fabricators to benefit from their experience in MOX fuel fabrication and may have some MOX Lead Test Assemblies and/or initial core loads fabricated in Europe. Also, participation in the construction and operation of a MOX Fuel Fabrication Facility in the United States will be open to European fuel vendors.

Comment Number 2

06 02 09

The avoided impacts are considered in Section 4.9 of the PEIS.

Comment Number 3

06 05 09

If the CANDU Reactor Alternative is selected, a complete assessment of reactor environmental impacts in Canada would be performed, pursuant to Canadian Federal and Provincial law.

Comment Number 4

The Department of Energy acknowledges the commentator's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

NAME: (Optional) DR. KENNETH F. NICHOLS
ADDRESS: 1430 OPAO PLACE SUITE 401, DUNEDIN CITY, TIRANAN UTILL
TELEPHONE: 661-6757

3. Canada (continued)
a) After Examinations For Canada Were Done At University
East And When He Heard
b) With Only 20 Minutes Were Allowed To Interview
When In A Hurry The next People For Questions
c) A Combination Of Interviewing And Then
Interviews Were Done At University With His Interview

4. From ~~Canada~~ Quebec And Is Only About
1 Hour Separately Because The Entire Country (From)
at The Western Mountain Part is Disconnected
at The Point To Hear The Central Mountains
Can Be Use.

5. _____

3/06.05.09
cont.

4/08.03.01

DC-004

NEUSCH, TRISH, PANHANDLE, TX
PAGE 1 OF 3

My name is Trish Neusch. I appreciate the change as a concerned citizen and parent. It is nice to have my comment heard. My husband Ronnie and myself have raised our boys children on an off-shore island across from the Pantex Plant. We live directly across the road from the northwest corner of the Pantex Plant.

I became very concerned recently while reading the Storage & Disposition of Weapons-Usable Fissile Materials Final PEIS (SDF-PEIS). If you will notice on page 2-80 of the document a map displaying the conceptual facility location in the southwest of Pantexum. At Pantex, I will walk in the northwest corner of the Pantex Plant site, there is a proposed site for an evolutionary spent water treatment plant. I don't know what anyone else thinks but I think it is a crying shame that any of these options we were being engaged, much less actually built in the vicinity of this site. I am a concerned parent. I have several of you who are children so not that important as you are to the area. I want you to think about that when you sit down to dinner tonight.

LWR is a place that is not enough water to cool, tough water able to run a station much less the cooling (recycling) water necessary.

1/08.03.01

2/09.04.04

TX-063

Comment Number 1

08 03 01

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment Number 2

09 04 04

It is possible that treated wastewater from the City of Amarillo could be used to supply the evolutionary LWR (Section 4.3.5.4.4). Cost issues are not within the scope of this PEIS. In this case, there would be no additional impacts over the No Action Alternative to groundwater resources. Environmental impacts from siting an Evolutionary LWR at Pantex would be evaluated in future site-specific reviews, as required, if this technology is chosen as a disposition alternative.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 02 04 Comment Number 4

Construction and operation of all storage alternatives at Pantex would not affect site infrastructure. Construction of all disposition alternatives would not affect infrastructure at Pantex, except for the evolutionary LWR. The evolutionary LWR at Pantex would require additional peak electrical load during construction. New and upgraded transmission lines would be put in place for increased and redistributed electrical load as part of the construction phase. Adequate electrical energy would be available from the regional power grid. The sub-regional electric power pool from which Pantex draws its power is the West Central Power Pool. Should the Evolutionary LWR Alternative be selected, the need for and location of any new or upgraded electrical lines would be determined in site-specific, tiered NEPA documentation, as required.

2/09.04.04
cont.

3/08.03.01

4/09.02.04

TX-063

the belief they spent fuel generated from such a plant and I don't know about you, but I don't know if a letter in 'my' sent you the document states several different places that they would be no impact to the water in the area. I have heard you say they say there processes release the water, my belief has been proven that the wells will be clogged by it. In page 4.14 of the document they mention the minimal site impact over the 10-year construction period. Engineering lines would be constructed & installed. I don't see why you had a belief that with limited and sophisticated public surveys over the construction of several years ago, they would put a lot of effort to do it right. They finally realized and started right on our part. I don't see the three huge transmission lines in areas where the huge, you haven't seen anything but the roads deeper to right.

My advice to the DOE is to think through things well. This isn't near as stupidly as said as well would be made to believe from listening to the so called city leaders.

Thank you, 335-9723
Mike W. Black, DOE 2 BOX
PANHANDLE TX
10068

Storage and Disposition of Weapons-Usable
Fissile Materials Draft PEIS

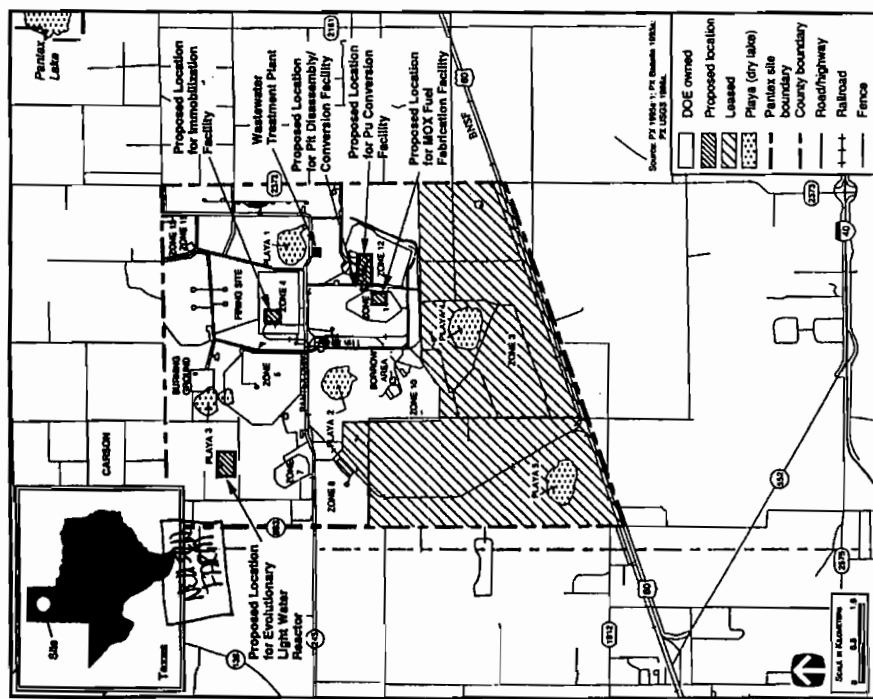


Figure 2.4-4. Conceptual Facility Location for the Disposition of Plutonium at Panhandle, Texas

NEVADA NUCLEAR WASTE TASK FORCE, INCORPORATED

Alamo Plaza
4550 W. Quaker Blvd.
Suite 111
Las Vegas, NV 89102
702-248-1127
FAX 702-248-1128
800-227-9809

April 2, 1996

David Nulton
DOE
Office of Fissile Material Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

COMMENTS ON THE DRAFT PEIS FOR STORAGE AND DISPOSITION OF
FISSILE MATERIALS

As with several of the Environmental Impact Statements now underway, critical comment on alternatives is of questionable value because the Department of Energy's stated intention is to select a "hybrid alternative." To do a complete evaluation of any proposed action, the commenter must have complete and clearly defined details, and know that the action, as stated, is a viable option. At a public meeting, held to discuss this document, workshop participants were told that some of the proposed actions was a "preferred alternative" and that the final Record of Decision could include elements chosen from several alternatives. Such a plan puts public participants at a serious disadvantage and weakens the effectiveness of their involvement. The result is declining or further fortified distrust toward the federal agency and its decisions - especially in matters where public health and safety are, or should be the highest priority.

The alternatives in the DPEIS are in two categories - long-term storage and plutonium disposition.

Long-Term Storage

Long-term storage is defined as fifty years. At the public meeting in Las Vegas the "no action" and upgrade alternatives were discussed in a facilitated workshop. The DOE presenter said, in response to questions, that the "no action" proposal would leave plutonium where it is and not include improvements and repairs necessary to bring facilities into a safe condition. Knowing that the existing facilities have deficiencies and problems that threaten the health and safety of workers and nearby communities, this alternative is unacceptable and could be considered a "straw man."

1/08.03.01

2/01.04.00

M-010

08 03 01 Comment Number 1

Between the issuance of the Draft and the Final PEIS, DOE has obtained information from a variety of sources, including the public. Public input was used to determine the Preferred Alternative and will be considered in DOE's decisionmaking process. DOE also conducted cost, schedule, and nonproliferation studies and reviewed various studies with the public before determining the Preferred Alternative.

01 04 00 Comment Number 2

Under the No Action Alternative, environmental and safety upgrades and maintenance at existing storage facilities would be done, as required, to ensure safe operation for the balance of the facility's useful life. The No Action Alternative is required pursuant to Council on Environmental Quality (CEQ) Regulations implementing NEPA.

NEVADA NUCLEAR WASTE TASK FORCE, INC., LAS VEGAS, NV,
JUDY TREICHEL
PAGE 2 OF 3

The second alternative - upgrade existing facilities - would clearly be the preference of this commenter, except that the DOE presenter said that it would include partial consolidation. "Partial consolidation" is a vague term and lends itself to the "hybrid decision" that would not be a subject to thorough evaluation by the public.	3/08.02.00
Neither of the two consolidation alternatives should be selected. There is no proven, safe method for long-term nuclear material storage. Every site is now, and will be, experimental with unforeseen situations and trial and error style responses. Consolidation, therefore does not ensure safety or environmental protection. It also has a transportation component that increases risks to a far greater number of people.	4/02.03.08
Plutonium Disposition Three technology alternatives are discussed for Plutonium Disposition. Two of them are not disposal technologies. Immobilization and reactor use are simply a change in the waste form. Currently, it is assumed that the resulting forms suggested will go to a repository for disposal. Because the existence or availability of a repository is not certain (and perhaps not likely), these two alternatives are incorrectly defined.	6/11.01.08
The third choice - deep borehole - is another possible "straw man." It is a concept with no proven merit and there is no site with any chance of public approval.	7/04.00.00
Clearly, the only option worth considering is long-term storage alone - it is the reality of the situation. Meanwhile alternatives for disposal should continue to be researched. Given the status of the knowledge about alternatives, a disposal decision is premature.	8/02.00.08
The preparation of an EIS is not simply a troublesome box to be checked off in the federal process. Likewise, the key element of it - public participation is not an unimportant detail. Of all the entities, (or in DOE jargon - "stakeholders") involved, the public is the only lasting one. While federal agencies come and go and congressional decisions change continually, the public remains. The citizens pay the costs, live with the risks and ultimately will be either adequately protected or the victims of irreversible consequences.	9/08.03.00
Submitted by,  Judy Treichel Executive Director	10/08.02.00

M-010

08 02 00 Comment Number 3

The PEIS provides specific information on the partial consolidation portion by analyzing the impacts of moving all of the surplus material from RFETS and LANL to one or more of the six sites being analyzed. Therefore, if all of the materials were sent to more than one site, environmental impacts at any of the sites receiving material would be less.

02 03 08 Comment Number 4

Comment noted.

10 00 00 Comment Number 5

The human health risks of material transportations associated with the proposed Pu storage and disposition alternatives are evaluated and presented in Section 4.4 of this PEIS. The more detailed description of the methodology and supporting data for the analysis is presented in Appendix G. Transportation of radioactive materials between sites includes health risks for both normal operations and accident conditions to the public and workers.

11 01 08 Comment Number 6

Comment noted. However, the goal is to convert the material into a form that meets the Spent Fuel Standard, which is not dependent on the availability of a repository.

04 00 00 Comment Number 7

Since no sites have been selected for a deep borehole and there are no existing deep boreholes utilized for waste disposal, DOE chose to analyze a generic borehole site for environmental impacts. The other disposition technologies require facilities which are similar to existing facilities in the United States. Therefore, DOE chose to pick representative sites for the other disposition alternatives.

02 00 08 Comment Number 8

Comment noted.

08 03 00 Comment Number 9

The Department of Energy is following a schedule that allows the careful consideration of all relevant information, such as this PEIS, technical and economic studies, and commentors' input. Then good, sustainable decisions can be made.

08 02 00 Comment Number 10

Comment noted. DOE is committed to full implementation of NEPA that includes public participation at all levels. All comments submitted receive full consideration.

NEWMAN, R. I., FRIPP ISLAND, SC
PAGE 1 OF 7

R.I. Newman
388 White Drive
Fripp Island, SC 29920
(803) 838-4789

May 2, 1996

U. S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC 20026-3786

Dear Persons:

Thank you for the opportunity to comment on your "Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement" (hereafter "PEIS").

The subject addressed in the PEIS must rank as among the most important, long- and short-term-affecting actions considered by the Department of Energy (DOE) in decades. It could have very significant impacts on near-term (two decades) budgets for R&D on unproven processes (with unpredictable delays and cost over-runs, based on earlier DOE projects), possible catastrophic energy crises in future years, perpetuation of significant CO₂ contamination of our atmosphere (in violation of international commitments), weakening of our national security, near- and long-term avoidable gross increase in energy costs (impacting most on some minorities and other low-income populations).

It should also complete the National Environmental Policy Act (NEPA) uncompleted review of the effect of using mixed oxide fuel (MOX) in reactors, along with reprocessing, on which (illegal) actions were taken by Presidents Carter and Clinton in what appeared to be violation of the congressional mandate requiring such review in advance of any action having a potential major impact on the environment (the proliferation aspects of the Generic Environmental Statement on Mixed Oxide Fuel were abandoned by the NRC after Mr. Carter's unilateral executive order).

I have two major objections to the PEIS as issued for public comment.

The first problem is the lack of information on matters decreed by Congress to be included in any environmental study as mandated by NEPA.

The second problem has to do with the subject of minimizing the possibility of proliferation of weapons-usable, in the U.S..

As to the first concern, the statement of policy in NEPA

M-162

requires several actions pertinent to my concerns: Title I, SEC. 101, (a) "...fulfill the social, economic, and other requirements of present and future generations of Americans."; Title I, SEC. 101, (b), (1), "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."; Title I, SEC. 101, (b), (6), "enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources."; Title I, SEC. 102, (C), (iv), "The relationship between local short-term uses of man's environment and the maintenance of long-term productivity; Title I, SEC. 102, (C), (v), "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."; Title I, SEC. 102, (F) "Recognize the worldwide and long range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment." (emphasis added)

My concerns, which prompt these comments are several. They include: 1. we seem to be more and more dependent on foreign sources for our fossil-fueled energy systems--gasoline ("borrowing" oil from our "strategic reserve"); 2. there is a finite limit to the now vast, fossil fuel reserves; 3. we have only one proven, available, economic ally competitive alternative to fossil fuel--nuclear; 4. while once the leader in nuclear technology, we are year by year losing those engineers with competence in designing safe nuclear fuel cycle facilities; 5. our nation's leaders seem to be oblivious to the relationship between readily available and dependable sources of energy and our national security; 6. loss of a supply of low-cost, readily available energy will not only impact our security, but will have a disastrous effect on our disadvantaged, low-income people with their insurmountable need for heat for their homes and gas for their cars.

A decision now to take an action which would intend to make a useful, and available energy source as irretrievable as possible and perpetuate the myth that we should not recycle partly used nuclear fuel would be tantamount to sounding the death-knell and driving the last nail in the coffin for the imminent demise of nuclear power, only to be brought back to life (inevitably) at great cost and only with the help of those foreign countries to whom we were once the leader.

The PEIS should look ahead as directed by NEPA at least fifty years at the impact on "future generations".

The PEIS should also look outside their blindered view of the "complete, uncompleted reactors" and "build advanced reactor" concepts. In the future, our country will need more large-scale supplies of electric power. The only two

1/08.03.01

2/08.00.00

1/08.03.01
cont.

M-162

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 00 00 Comment Number 2

The PEIS analyzes the impacts on the environment for the period required to accomplish the Proposed Action under each of the alternatives (up to 50 years after the ROD for storage, and within 25 years after the ROD for disposition). Such an analysis cannot go much beyond that timeframe without becoming "remote or speculative."

The PEIS takes into account future generations in that its purpose is to reduce surplus Pu stockpiles, potential proliferation, and other potential environmental impacts. The PEIS considers long-term consequences of irreversible/irretrievable commitment of resources (Section 4.11).

07 02 00

Comment Number 3

Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in late July 1996. These documents were available for public review beginning in late July 1996.

of some for, at least, the next two or more decades are fossil or nuclear power. The more central station nuclear power we have, the less fossil we need to consume for uses (like heating homes, operating vehicles, our military, etc.) which nuclear can not directly provide. (If we go to electric vehicles, we need that much more central station power--NIMBY.) Also, for every kilowatt of electricity produced by nuclear, there will be that much less carbon dioxide from fossil fuel released by the United States to the atmosphere (remember Vice-President Gore's commitment in Brazil to work toward reduction of such pollution because of the likely "green-house effect"?). There will also be fewer oil spills with their devastating pollution and less pollution of various kinds from coal burning. (Doe is working on methods for burning of coal which will be "cleaner". Like the glass of water--half full or half empty? Is this work to make it "cleaner" or "less dirty"?)

NEPA mandates the economic effects of any action be addressed. When I raised this subject at a meeting on the PEIS, the DOE spokesman replied that costs alone should not drive any environmental decision to force a negative rather than a favorable impact. I agree. However, a cost-benefit analysis is imperative. If between two alternatives, there are minor differences in environmental impact, but one requires billions of dollars more and delays in implementation 10 to 15 years beyond the other (when time is of the essence), a cost-benefit analysis could and should be a critical ingredient in the decision making. I am certain that DOE is not oblivious to the need to spend money only when it is really necessary, such as solving this matter to enhance our nonproliferation posture at the very earliest time. Of course, the relative economics of fossil fuel in nuclear should be included in the equation. Nuclear (with reprocessing) is now competitive in foreign countries. The inevitable increases in fossil fuel costs of the future should heavily weigh on the scales.

The PEIS obviously gives great weight to the National Academy of Science (NAS) report on plutonium. In the NAS report on Reactor-Related Options, it is stated, on page 384, "Since the NRC is an independent agency, the administration could only request, not direct, the NRC to halt the GESMO hearings. The administration did make clear that there would be no federal funding requested for any aspect of the reprocessing regime. Because the potential reprocessing industry depended on federal funding, including development of breeder reactors, the administration's position made the GESMO hearing irrelevant." I, as a former vice-president of Allied-General Nuclear Services, find this statement is patently wrong in two respects: first, while we were given access (with proper clearances) to AEC (some--not all) technology, we, as a policy, received no financial reimbursement until after Mr. Carter's order

believe

3/07.02.00

M-162

09 09 08 **Comment Number 4**

Since many of the potential actions under the various alternatives are still in the preliminary development stage, the actual information for these alternatives is not yet available. When no actual information is available, estimations must be made to predict environmental impacts. Because of uncertainties in these estimations, conservative assumptions are made to show the maximum potential environmental impacts. Where actual information is available, it is used in the PEIS.

09 09 08 **Comment Number 5**

Appendix F, "Air Quality and Noise," does not address spent nuclear fuel as a recoverable resource, and the Draft PEIS does not include page F-33, the page number is apparently misstated. However, Section 4.11 of the PEIS addresses "Irreversible and Irrecoverable Commitments of Resources" and acknowledges that disposing of Pu represents an irretrievable commitment of a potential energy source.

then only for projects DOE considered important to them. Second, reprocessing does not rely on the breeder but both the light water reactor (financially) and the breeder (for its fuel) need reprocessing.

An adequate cost-benefit analysis, including the cost of R&D and the benefit of power generation must look at the time required for R&D, even that (as with DMPP) performed during pre-operational testing. While timing itself is not a directly pertinent factor, a cost-benefit study, it should be highlighted as there is unanimity that the urgency of implementation non-proliferation actions is great. On page S-3 of the PEIS is the statement, "The purpose of the proposed action is to implement the President's Nonproliferation and Export Control Policy in a safe, reliable, cost-effective, technically feasible and timely manner." (Emphasis added)

I believe there is another flaw in the PEIS. With nuclear operations, two different studies are required in government as well as industry. One is the PEIS, which is now being discussed. The other is a Safety Analysis Report (SAR). They serve two entirely different purposes. The SAR, as its name implies, is intended to analyze in minute detail, the expected safety of the proposed operation. For this reason, the NRC requires that air and water-borne releases from both normal and accident conditions be looked at conservatively. This requires that margins be added to any consequence number. To assure that, in real life, said consequence will have a lower actual adverse impact on the public and workers than estimated (a margin of safety). I do not have a copy of the guidelines issued by the President's Council on Environmental Quality, but, as I recall, the Council said that an environmental impact statement, as a tool for comparing alternatives, should express environmental consequences in realistic, or best estimate numbers rather than conservative numbers. On page 4-19 of the PEIS, for example, it is stated, "Studies of human populations exposed to low doses are inadequate to demonstrate the actual level of risk. There is scientific uncertainty about cancer risk at the low-dose region below the range of epidemiological observation and the possibility of no risk or even health benefits cannot be excluded. Because the health risk estimators are multiplied by conservatively calculated radiological doses to predict fatal cancer risks, the fatal cancer values presented in this PEIS are expected to be overstated."

4/09.09.08

Finally, on the NEPA considerations, NEPA addresses "any irreversible and irretrievable commitments of resources". The PEIS defines actions which are designed to make a valuable energy resource as difficult as possible to recover in the future. Yet, on page F-33 is the statement, "Existing rulings designate spent nuclear fuel as a recoverable resource...."

5/09.00.08

M-162

My second concern, non-proliferation, is important as it is dividing this PEIS with, I believe, false, short-sighted premises.

The only certain, long-term way to make weapons-usable plutonium unavailable for weapons manufacture is to burn it up!

The PEIS alternatives have, at least, two major shortcomings: They leave most of the plutonium available to future generations for power only at a high cost of money and probably radiation exposure to those who must, out of desperation for energy, retrieve it. Also, they ignore the availability of high levels of security measures needed, world-wide, in the interim period during which the PEIS actions are debated, researched, pilot-planted, constructed, and implemented.

Another false premise is that the declarations by Presidents Carter and Clinton are cast in concrete (or vitrified). Any decision, be it by Congress, the Supreme Court, or the President can be, and often is, revisited. The orders of the two Presidents are now ripe for review!

The excuse (or reason--call it what you may) for abandoning reprocessing (recycling) was to set an example to other countries. That was the purported basis of stopping a private effort to develop an economic gas centrifuge for uranium enrichment in the mid '60's. The stoppage didn't work. Centrifuges are now in use around the world (including the U.S. and Russia).

Further, if reprocessing is such a potentially proliferation-possible activity, why does the U.S. stand by when it is now being done in France, England, Russia, etc.? The U.S. was one of the principal architects of the International Atomic Energy Agency (IAEA), the principal purpose of which was to minimize the threat of proliferation. If reprocessing is such a threat, why doesn't the U.S. insist that the IAEA stop it world-wide?

Maybe we should look a short way into the future.

Looking at what DOE is proposing in the PEIS, there are three phases. First is the decision, R&D, debate, construction, check-out, debate, and start-up. Second is the operation, possibly making the plutonium irretrievable. The third is then, "Oops, we're running out of fossil fuel--what do we do now?"

The first phase, depending on which way we go, could take 5-10 years. (Look at the high level waste disposal program.)

The second phase could take 10-20 years.

6/01.06.00

7/01.06.00

01 06 00

Comment Number 6

Comment noted. The President's Nonproliferation Policy states that the United States does not encourage the civil use of Pu and, accordingly, does not itself engage in Pu reprocessing for either nuclear power or nuclear explosive purposes. The United States, however, will maintain its existing commitments regarding the use of Pu in civil nuclear programs in Western Europe and Japan.

The policy also states that the United States will make every effort to secure the indefinite extension of the Nonproliferation Treaty. The United States will seek to ensure that the IAEA has the resources needed to implement its vital safeguard responsibilities, and will work to strengthen the IAEA's ability to detect clandestine nuclear activities.

01 06 00

Comment Number 7

Comment noted.

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NEWMAN, R. I., FRIPP ISLAND, SC
PAGE 6 OF 7

During this 15-40 years, we still have weapons-usable plutonium on our hands (and other countries are still recovering it!). During this time, we must have a high level of physical security!

A publication I just received gave me encouragement on security. It was the program of an upcoming meeting of the Institute of Nuclear Materials Management (INMM). At their upcoming four-day meeting there will be some 285 papers presented on safeguards on materials from uranium hexafluoride through MOX fuel fabrication plants to high and low level waste. Of these, at least 180 relate to the safeguarding of plutonium. Authors are from around the world. Gratifyingly, about 100 papers were authored by employees of DOE or DOE contractors, often in collaboration with representatives of foreign countries.

The subject of physical security is most certainly getting a high priority. If we can protect our weapons-grade-plutonium and the French and English theirs, why can we not protect our weapons-usable plutonium recycled from power reactors?

Let's look at reprocessing.

There is no evidence I have seen or heard that our head-in-the-sand has had any influence on anybody. Reprocessing conserves fossil fuel and uses other natural resources for the benefit of future generations. Nuclear, with reprocessing, significantly reduces atmospheric carbon dioxide pollution, oil spills, etc. The realistic environmental impact of nuclear power and reprocessing is minimal. If security can help protect us in the next quarter of a century or more, why the proliferation concern on reprocessing? Abandonment of reprocessing for the coming decades will rob us of the great expertise on reprocessing plant design and operation we developed over the past 50 years.

he PEIS should be rewritten for many reasons (many of which I have not addressed) to comply with the mandates of NEPA and the CEQ and to give the true picture on reprocessing and other PEIS-related matters to the American public.

The above is not to fault the DOE. It is simply doing what the boss ordered. (Marching to the drummer's beat.) However, as scientists and public servants, it has, at least, an equal obligation to state the facts, fully and openly.

Respectfully yours,

R. I. Newman
R. I. Newman

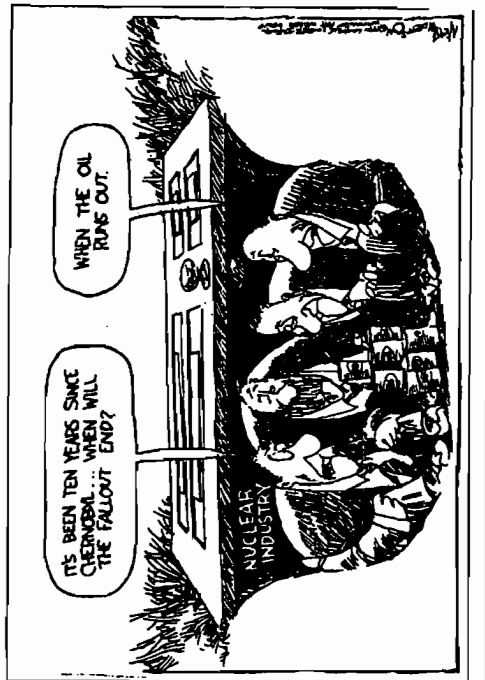
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M-162

NEWMAN, R. I., FRIPP ISLAND, SC
PAGE 7 OF 7

*Gazette
5/14/96*

OPINION



M-162

NEZ PERCE TRIBE, LAPWAI, ID,
SAMUEL N. PENNEY
PAGE 1 OF 1

08 01 00 Comment Number 1

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

08 02 00 Comment Number 2

The Department of Energy acknowledges the commentor's support for coordination and increased understanding on the decisions to be made on the storage and disposition of weapons-usable fissile materials. However, the National Dialogue Project is beyond the scope of this PEIS.



Nez Perce

TRIBAL EXECUTIVE COMMITTEE

P.O. BOX 300 - LAPWAI, IDAHO 83845 - (208) 845-2253

May 6, 1996

Sam R. O'Leary
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Secretary O'Leary:

The purpose of this letter is to inform you of an official request from the Nez Perce Tribe for an extension of the comment period for the draft environmental impact statement concerning the Storage and Disposition of Weapons-Usable Fissile Materials. We had this comment period extended to accommodate the lack of tribal consultation during the early process and prior to the release of the document for public comment. The gravity of the decision and potential environmental impacts of the consolidated federal options are cause for grave concern. To address this concern the Nez Perce Tribe has developed the National Tribal Placemaking Forum to give Tribal leaders the information and means to the experts necessary to develop carefully considered responses to the decision actions we are facing.

The National Tribal Placemaking Forum was developed to give the decision making process and giving the tribes an open dialogue, which is the second purpose of this letter. The objectives of Acting Undersecretary O'Leary to bring the placemaking decisions together in a coordinated and understandable manner is achieved by the recommendations from Tribal leaders gathered for the National Tribal Placemaking Forum. The Nez Perce Tribe, however, can not continue with the release of the National Tribal Placemaking Forum. The Nez Perce Tribe, with this organization leads us to believe our issues will not be understood or addressed in a fair manner. The tribal and political leaders from the Nez Perce Tribe over certain issues have believed the relationship between the tribe and this organization. We recommend that a new publicly coordinated organization be established to address the issues of this important effort. In particular, we request that the National Tribal Placemaking Forum be given the authority to coordinate the response to the National Tribal Placemaking Forum and to the National Tribal Placemaking Forum. The National Tribal Placemaking Forum, in particular, is an organization we could support to develop this national equity dialogue.

Thank you for this opportunity to express our issues and concerns in the continuing placemaking decision making process.

Sincerely,

Samuel N. Penney

Samuel N. Penney
Chairman

cc: O'Leary
Chancellor
Secretary

1/08.01.00

2/08.02.00

F-018

NO NAME SUBMITTED
PAGE 1 OF 1

3-494

09 00 08 Comment Number 1

Based on comments received, reference to "adverse" impacts has been deleted from the Draft PEIS and Summary in order to describe impacts less subjectively. This is the same reason "significance" of impacts is not used. Environmental impact descriptions in the Final PEIS and Summary have been expanded and revised, and are generally described in quantifiable and semi-quantifiable terms.

In the PEIS, ground water is discussed under water resources in terms of impacts on both quantity and quality. Agriculture is evaluated in terms of land resources and human health risks from the ingestion of crops and animal products. For the construction and normal operation of the various proposed storage and disposition actions, including the Preferred Alternative, no major problems to ground water and agriculture were identified in the impact analyses conducted for the Final PEIS. Discussion on potential environmental impacts is presented in Chapter 4 of the Final PEIS. Those revisions made in the Final PEIS are also reflected in the Summary.

Date: Tue, 23 Apr 1996

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** The following is the text of the Author's Comment.

With regard to this PEIS, the SSMPEIS and the Pantex EIS:

1. Why, in identifying impacts, does DOE not identify significance of impacts, particularly "adverse" impacts?

2. During scoping for these documents agriculture and groundwater were identified as important issues to stakeholders. The documents do not identify any significant impacts to either. Because they were identified as issues, DOE should explicitly state there are no problems if that is its conclusion.

Please take a position on the important issues!

END comment

** The following is the space reserved for an Official Reply. If you

** do not wish to reply to this comment then do not change it.

** If you wish to leave a comment then enter it here in the REPLY

** area

Begin Reply

(*** insert reply here ***)

End Reply

1/09.00.08

E-004

 COMMENTS FORM These comments apply to the following documents: Statement and Recommendation: DOE PEIS Statement and Recommendation: Environmental Impact Statement: Site Specific Draft EIS	United States Department of Energy NAME: (Optional) _____ ADDRESS: _____ TELEPHONE: () _____ COMMENT (and background information): Section 1502.1 of 40 CFR Parts 1500-1508, the regulations implementing the National Environmental Policy Act states: "The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government. It shall provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues. Statements shall be concise, clear and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses." (emphasis added) QUESTION: In light of these very clear and concise instructions based in law, how does DOE rationalize that Pantex is identified as having: "the greatest potential to experience adverse cumulative impacts, particularly because of its relatively small, compact area. Water resources and biological resources would be vulnerable, and land resources... could be susceptible to adverse cumulative impacts." (p. 5-46)? (emphasis added)

1/09.00.04

M-090

09 00 04 Comment Number 1

Based on comments received, the Summary was revised. There was no intention to portray Pantex, the Pantex region, or the Texas Panhandle region in a negative fashion. Each DOE site was analyzed and studied in the same manner and presented in the Draft PEIS accurately per these analyses and studies. All revisions made to the PEIS text are included in the Summary of the Final PEIS.

NO NAME SUBMITTED
PAGE 2 OF 7

DRAFT S&DPEIS

COMMENT (and background information):

In the Summary (p. S-46), it is stated that "When the other DOE programs previously identified in this section are considered, the rank order of DOE sites in terms of their descending potential for cumulative impacts changes to SRS, INEL, Pantex, NTS, Hanford and ORR." A similar statement appears on p. S-47.

QUESTION:

What does this statement mean? It is obscure and demands an explanation that is concise, clear, to the point, and supported by evidence.

2/09.00.04

09 00 04

Comment Number 2

The Department of Energy did not intend to give the perception that the sites were ranked. The language in the Summary has been revised to better reflect the impact analysis in Section 4.7. The Final PEIS provides the necessary information to describe the impacts for the resources analyzed. It is up to the decisionmaker to determine which impacts are discriminators among sites.

M-090

NO NAME SUBMITTED
PAGE 3 OF 7

09 11 08 Comment Number 3

The conceptual design for the consolidated and collocated storage facilities and the disposition facilities have, as part of their design, waste management facilities that would treat and package all waste generated into forms that would enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State statutes and DOE Orders. The impacts of having to construct the waste management facilities are captured in other resource areas such as land use and air quality. The text referring to "potential adverse impacts" to waste management has been deleted.

DRAFT S&DPEIS

COMMENT (and background information):

In the Summary it is stated (p. S-20) that "Potential adverse impacts to waste management would occur at Pantex, ORR (all three options), and SRS, because the construction of sanitary, utility, and process wastewater treatment systems to treat nonhazardous liquid wastes may be required."

QUESTION:

How can the construction of facilities and systems to treat waste have the potential to adversely impact the management of waste? Is this a significant environmental impact as intended by §1502.1 of the NEPA regulations?

3/09.11.08

M-090

NO NAME SUBMITTED
PAGE 4 OF 7

DRAFT SADDPEIS

COMMENT (and background information):

The off-repeated phrase appears in the Summary:

"Potential adverse interstate transportation impacts related to all DOE sites could occur because of the increased risk of traffic accident fatalities."

QUESTION:

Is there no risk to human health associated with interstate transportation of radioactive material?
Has a dose risk assessment been made?

4/10.00.00

10 00 00 Comment Number 4

The human health risks of material transportations associated with the proposed Pu storage and disposition alternatives are evaluated and presented in Section 4.4 of this PEIS. The more detailed description of the methodology and supporting data for the analysis is presented in the Appendix G. Transportation of radioactive materials between sites includes health risks for both normal operations and accident conditions to the public and workers.

M-090

NO NAME SUBMITTED
PAGE 5 OF 7

DRAFT S&D PEIS

COMMENT (and background information):

The Summary discusses three plutonium disposition categories (deep borehole, immobilization and reactor) consisting of nine alternatives, and ultimate high-level waste disposition.

QUESTIONS:

a. If the immobilization alternatives and reactor alternatives (except CANDU) result in the same ultimate disposition, viz., a high-level waste (HLW) repository, what is the cost/benefit of the reactor alternatives?	5/07.02.00
b. Doesn't a HLW repository mean the DOE's High-Level Nuclear Waste Repository at Yucca Mt., Nevada?	6/12.01.00
c. What would constitute ultimate disposition in the case of the CANDU reactor alternative? Would the Canadians be allowed to send the resultant high-level nuclear waste back to the U.S.?	7/06.05.08

07 02 00 **Comment Number 5**

Cost data, along with technical and schedule data, were provided in a Technical Summary Report for disposition in late July 1996.

12 01 00 **Comment Number 6**

The PEIS does not assume the use of Yucca Mountain as a HLW repository for disposal of MOX spent nuclear fuel and/or immobilized materials. However, since Congress directed Yucca Mountain to be the only site considered for evaluation (site characterization) for the disposition of spent nuclear fuel and HLW, data developed to date at this site has been used to evaluate the potential for disposing of Pu wastes.

06 05 08 **Comment Number 7**

No. The spent fuel would be retained within the Canadian spent fuel program.

M-090

NO NAME SUBMITTED
PAGE 6 OF 7

DRAFT S&DPEIS

COMMENT:

In the Summary, under "Phaseout" (page S-21), it is stated that:

"For all DOE sites, with the exception of Pantex, phaseout would have a potential for adverse impacts to cultural resources if any of the structures eligible for National Register of Historic Places (NRHP) listing would not be maintained," and "None of the affected structures in Zone 12 at Pantex are considered eligible for NRHP listing."

This is not an accurate statement! Several of the structures in Zone 12 are potentially eligible for NRHP listing under the Cold War context. Pantex Plant is working with the State Historical Preservation Office (SHPO) and the Advisory Council on Historic Preservation regarding the subject of "Cold War" structure NRHP listings.

It is anticipated that several of the Zone 12 structures will be listed. The draft S&DPEIS text should be corrected.

8/09.07.04

09 07 04

Comment Number 8

The Summary was corrected to be consistent with Section 3.5.7 which says that Zone 12 does include a number of structures potentially eligible for the NRHP.

M-090

09 10 08 Comment Number 9

DRAFT S&DPZIS

COMMENT (and background information):

In Volume III (pp. M-131 through M-155), the chemicals used are as follows:

- Hanford reports 3 chemicals, none with slope factors
- NTS reports NO chemicals
- INEL reports 28 chemicals, 12 with slope factors
- Pantex reports 25 chemicals, 6 with slope factors
- ORR reports 10 chemicals, none with slope factors
- SRS reports 15 chemicals, 5 with slope factors
- Rocky Flats reports 10 chemicals, 3 with slope factors.

These reported chemical usages present an erroneous comparison, as all sites under consideration will use similar chemicals. For example, benzene is a combustion product of both diesel fuel and gasoline, and would be common to all sites.

QUESTION:

Was the manner by which the information was requested not specific enough to insure accurate reporting or are the records at some sites incomplete? Please correct.

9/09,10,08

M-090

The data calls sent to each site contained the same information and requests. Under the No Action Alternative, the emissions data is from existing site facilities. Since each site has different existing facilities and operations, the chemicals emitted from these facilities are expected to be different. The cancer risk slope factors depend solely on the nature of the chemicals. For proposed new actions, the emissions data would be very similar among the sites. For detailed information on the emission data on each site, please refer to the respective data reports cited in the PEIS.

NO NAME SUBMITTED
PAGE 1 OF 2

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional): See back
Address (optional): _____

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comments on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
1000 Independence Avenue, S.W.
Washington, D.C. 20055-5786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 7, 1994.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials: immobilization, incineration, and deep borehole disposal. Each of these would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Verification - Immobilize fissile materials by mixing them with glass, glass bonded zirconia, or ceramics.

See other info

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

See other info

3. Reactor Option - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, thereby by making a major portion of the weapons grade materials.

See other info

4. Storage Option - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consider new storage at one or more of the designated sites.

See other info

NO NAME SUBMITTED
PAGE 2 OF 2

Comment Number 1

14 00 00

Comment noted.

Please use this space to write down any additional comments on the Storage and Disposition of Weapons-Usable Plutonium Draft Programmatic Environmental Impact Statement.

There must be a way to take
Plutonium in small quantity, like
1 milligram and to cause its
existence to cease.
To Cease by heat, cold, chemicals,
bacteria - or if nothing else
works. To cease by placing
The Plutonium unit in front of a
full-sized portrait photo. of
an x-mother-in-law!

1/14.00.00

M-192

NO NAME SUBMITTED
PAGE 1 OF 1

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional):
Address (optional):

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.

I think this is the best long term solution 1/08.03.01

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

Unacceptable 2/08.03.01

3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, decaying by fission a major portion of the weapons grade materials.

This seems to be the best near term solution. 3/08.03.01

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.

We need to get on with it

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

M-227

NO NAME SUBMITTED
PAGE 1 OF 1

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comments Form

Name (optional):
Address (optional):

Please write down your comments and drop this form in the marked boxes before you leave
tough. These forms will be submitted to the Department of Energy as part of the formal comment on
this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Environmental Policy
P.O. Box 23786
Washington, D.C. 20026-3786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be
submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of
weapons-usable fissile materials. The Department is interested in your comments on these options.
would want to know more about the storage of these materials. Please write down your comments on the following
three types of options for disposal and the storage options.

1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass
bonded zirconium, or ceramics.

I support this concept

1/08.03.01

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in
geologically stable formations. Materials could be disposed directly into the deep borehole, or materials
could be immobilized first, and then deposited into the deep borehole.

No

2/08.03.01

3. Reactor Options - Surplus plutonium/lightly enriched uranium would be made into MOX fuel for use
in nuclear reactors, destroying by fission a major portion of the weapons grade materials.

*I may support this proposal if there are no safety
safeguards*

3/08.03.01

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile
materials at current locations and/or consider that storage at one or more of the designated sites.

I would support this in the short term

4/08.03.01

M-229

Comment Number 1

08 03 01

The Department of Energy acknowledges the commentor's support for the
Vitrification Alternative. Decisions on disposition of weapons-usable fissile
materials will be based upon environmental analyses, technical and economic
studies, national policy considerations, and public input.

Comment Number 2

08 03 01

The Department of Energy recognizes the commentor's concern with the
Borehole Alternatives. Decisions on the disposition alternatives will be based
upon environmental analyses, technical and economic studies, national policy
considerations, and public input.

Comment Number 3

08 03 01

The Department of Energy acknowledges the commentor's support for Pu
disposition in reactors. Decisions on disposition will be made based upon
environmental analyses, technical and economic studies, national policy
considerations, and public input.

Comment Number 4

08 03 01

The Department of Energy acknowledges the commentor's support for the
storage of fissile materials. Decisions on storage of weapons-usable fissile
materials will be based upon environmental analyses, technical and economic
studies, national policy considerations, and public input.

**Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form**

Name (optional): _____
Address (optional): _____

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
Attn: Mr. J. L. Smith
Washington, D.C. 20545-7786

or, you can call this toll-free number to leave comments by phone: 1-800-426-5156. Comments must be submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

QUESTION: THE DEPARTMENT HAS IDENTIFIED THE FOLLOWING AS OPTIONS FOR DISPOSAL OF WEAPONS-USABLE FISSILE MATERIALS: -- ADV. BOREHOLE DISPOSAL, STORAGE, IMMILIZATION.

3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.

1. BEST SURVIVAL MOX FUEL

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage in one or more of the designated sites.

"No Action" is the worst option.

1/09.05.08
2/08.03.01

3/08.03.01

4/08.03.01

M-231

09 05 08

No actual sites for the Deep Borehole Alternative currently exist or have been proposed. Therefore, a generic site was evaluated in the PEIS. DOE's decision on surplus Pu disposition for the borehole technology encompasses only the selection of a strategy and does not involve the selection of a borehole disposition site. Should either of the Deep Borehole Alternatives be selected, a siting study would be conducted in coordination with a site-specific discussion of environmental conditions and impacts in additional documents.

08 03 01

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01
Comment Number 3

The Department of Energy acknowledges the commentator's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01

The Department of Energy acknowledges the commentator's opposition to continuing or long-term storage. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

M-231

NO NAME SUBMITTED
PAGE 2 OF 2

08 01 00 Comment Number 5

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

Please use this space to write down any additional comments on the Storage and Disposition of Weapons-Usable Fluid Materials Draft Programmatic Environmental Impact Statement.

5/08.01.00

AN EXTENSION OF THE COMMENT PERIOD IS
NECESSARY TO ENSURE PARTICIPATION OF
AFFECTED STAKEHOLDERS.

THIS TYPE OF NORMATIVE ENVIRONMENTAL
PROBLEM IS A WORTHWHILE USE OF TIME &
RESOURCES.

M-231

NO NAME SUBMITTED
PAGE 1 OF 1

3-508

Comment ID: P0011
Date Received: April 18, 1996
Name: none given
Address:

Transcription:

I would like to vote yes for the project. Thank you. | 1/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's support for long-term storage and disposition of weapons-usable fissile materials. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-011

NO NAME SUBMITTED
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment ID: P0025
Date Received: April 18, 1996
Name: none given
Address:

Transcription:

I prefer not to give my name, but I would like to comment on the plutonium disposal. I prefer that they burn the plutonium in a appropriate reactor, and use it up that way and make it profitable where we've put so much money into it already. It would also provide jobs in operating these reactors. Thank you.

1/08.03.01

P-025

Date Received: 06/14/96
Comment ID: P0054
Name: None given.
Address: No address given.

Transcription:

My question is: How is the Department saving money in the engineered design of plutonium storage facilities? Its seems like the upgrade facilities are being designed uniquely, and I base this on the different numbers with no common ratios in the appendices. So if it's true that we're having unique designs for the different upgrade facilities, we're spending four times the architectural engineering design funds than is necessary. What is the Department doing to minimize expenses by maximizing the use of common plutonium storage facility designs? Thank you for considering the role of the taxpayer, who is your ultimate stakeholder.

1/07.01.00

07 01 00 Comment Number 1

For the Upgrade Storage Alternative considered in the PEIS, DOE has attempted to minimize the costs of engineered design, construction, and operation by utilizing the same standards, criteria, and technical approach wherever possible for the facilities being considered. However, due to differences in existing storage facility configurations and equipment at the various DOE sites involved, the upgrades are necessarily different to be compatible with existing design and configuration.

NO NAME SUBMITTED
PAGE 1 OF 1

Date Received: 06/14/96
Comment ID: P0055
Name: None given
Address: No address given.

Transcription:

I have a question concerning the high level waste repository for the Storage and Disposition Environmental Impact Statement. I have read the Notice of Intent for the Yucca Mountain Environmental Impact Statement, and the Department of Energy's intent, according to that document, is not to put plutonium in the repository, other than what's in commercial spent fuel. I have read the Storage and Disposition Environmental Impact Statement, and it says that the Department's intent, if immobilization is chosen, is to put plutonium in the repository. So which document has the true Department of Energy intent, and which document is trying to hide something from the public? The two documents of course, are the Storage and Disposition Environmental Impact Statement and the Department of Energy Notice of Intent for the Yucca Mountain EIS. Thank you. Please be open and honest. Bye.

1/12.00.00

12 00 00

Comment Number 1

The Notice of Intent (NOI) for the Repository EIS considered only commercial spent nuclear fuel, DHLW, and DOE-owned spent fuels. If the timing of the Repository EIS (and subsequent license application) does not permit inclusion of Pu forms resulting from a ROD on Pu Disposition, then supplemental NEPA compliance documentation will be required. The Office of Fissile Materials Disposition is working closely with the Office of Civilian Radioactive Waste Management to ensure coordination between these two efforts.

P-055

SR-003

FEASIBLE MATERIALS PEIS COMMENTS

There does not seem to be any discussion about costing of alternatives. Does cost of each alternative play a role in choosing preferred alternative? When choosing a preferred alternative, it would be fiscally irresponsible without cost evaluation.	1/08.00.00
As Pantex dismantlement decreases, the number of buildings used for this purpose will decrease. Plans for each alternative on page S-12 specify modifying and/or building new facilities. Did these plans take into effect, that existing structures would become available for use, thus avoiding large new construction costs and minimizing impact on the environment.	2/02.00.04
On page S-18, under the No Action Alternative, (Page S-19 Upgrade Alternative, Consolidation Alternative (both options), page S-20 Expand-Use Alternative, Collocation Alternative, S-28 Disposition Alternative, Pa Disassembly/Conversion Facility, S-30 Ceramic Immobilization Facility, S-31 Vitrification Alternative, S-33 MOX Fuel Fabrication Facility, S-35 Evolutionary LWRs Alternative) the summary states "Adverse impacts to water resources at Pantex would result from the continued local drawdown of the Ogallala Aquifer, but Pantex's contribution to this drawdown is expected to continue to decrease due to a decrease in other DOE activities at Pantex. There does not appear to be an evaluation of decrease versus increase in the above statement and consideration of using reclaimed wastewater. On page 3-159 of Volume 1, it states that "an agreement between Pantex and the city of Amarillo is currently being negotiated to develop reclaimed wastewater ... The use of reclaimed wastewater could curtail the annual decline rate of the Ogallala Aquifer." There does not appear to be any evaluation or consideration given to reclaiming wastewater and reusing that water with respect to "adverse impact: Evaluation of recycling treatment water (Amarillo & Pantex agreement) Page S-64 Summary Comparison states that Pantex would use the least amount of water among candidate sites and 57% of water used would be discharged back to the plays and consequently the aquifer. No adverse impact is mentioned. In other parts of the summary, water usage is mentioned as a percentage and thus skew the perception of impact. Since Pantex uses less water from the surrounding area than any of the other candidate sites, any increase in water usage would come out as a higher percentage given an equal increase at all sites. Even this is not true since other sites would use more water than Pantex for these options. In the detailed description of Volume II, pages 4-190 through 4-192, water usage for the alternatives has a negligible impact on the aquifer as stated by "water requirements are small relative to the total water in aquifer storage"; "Total projected amount to be pumped in Carson County by an insignificant amount (0.0001-percent)", and "there should be minimal	3/09.04.04

TX-050

08 00 00 Comment Number 1

The technical, cost, and schedule analyses of the various alternatives are presented in a separate document to support DOE's ROD. This document was made available to the public for review beginning in late July 1996.

02 00 04 Comment Number 2

As the mission for Pantex changes, DOE will continue to evaluate the possible re-use of existing facilities versus the need for new facilities. Existing facilities will be utilized, where possible, to avoid the cost and related impacts of building new facilities.

09 04 04 Comment Number 3

The actual quantities required for each alternative and the associated percent increases are provided in Chapter 4 of the PEIS and also in the table entitled "Potential Changes to Water Resources at Pantex Plant No Action (2005) and Storage Alternatives." Although Pantex is contributing to the depletion of the Ogallala Aquifer, as stated in Chapter 4, additional groundwater drawdowns attributed to the various long-term storage alternatives are expected to be slight, with minimal impacts to regional groundwater levels. The Summary was revised to emphasize that Pantex's water use from the Ogallala Aquifer is expected to decrease significantly by the year 2005, and that additional withdrawals attributed to the long-term storage alternatives should have only a minor impact on groundwater resources.

The possible use of reclaimed wastewater is not examined in detail in the PEIS because some data (such as cost-benefit analysis) have not been determined for implementing the pipeline specifically for any of the alternatives proposed in this PEIS. In general, several of the disposition alternatives are the only ones which require enough water to consider a project of the scale of constructing an approximately 32.2 km (20 mi) long pipeline to supply water to Pantex. Future tiered NEPA documents would be conducted, as required, to analyze the feasibility of providing Amarillo's treated wastewater to Pantex.

impacts to regional groundwater levels from this additional withdrawal. The total water withdrawal... would be less than what is currently being withdrawn from the Ogallala Aquifer by Pantex." This does not create an "adverse impact."	3/09.04.04 cont.
- On page S-18, under the Upgrade Alternative, (S-19 Consolidation Alternative, S-20 Collocation Alternative, S-28 Disposition Alternative, S-31 Conversion Alternative) the summary states "The Upgrade Alternative would have potential adverse impacts to air quality at Hanford (both options), INEL, Pantex, and SRS, since air pollutants concentrations would increase during construction and operations. Yet in the very next sentence, the summary states "Cultural and paleontological resources could be affected wherever there is ground disturbance due to construction ... except at ... and at Pantex, because no new ground disturbance would be involved." - what part of operations would adversely impact air quality at Pantex. - On Page S-72, which is approximately the same for all other alternatives, the summary states "During construction, site is expected to comply with ambient air standards and guidelines. During operation... site is expected to comply with ambient air standards and guidelines." There is no adverse impact stated during Appendix A summary comparisons. The above is stated for all sites. Why are only specific sites mentioned above singled out for "adverse impact"? If Pantex, as a candidate site, is expected to comply with all ambient air standards and guidelines then where is the "adverse impact" in that? - In volume II, the words "adverse impact" are never mentioned in regards to air quality. Volume II, pages 4-184 and 4-185, does mention "increased PM10 and TSP concentrations may occur during the peak construction period, particularly during dry and wind conditions." Has an evaluation taken place to compare this small area of construction with the thousands of acres that are plowed annually in this area during dry and windy periods. The increase in PM10 and TSP directly attributable to Pantex would be negligible -- not an "adverse impact".	4/09.03.04
- On page S-19, under the Consolidation Alternative, the summary states "The potential for adverse impacts to land resources exists at ... Pantex, under the construction of a new facility north of Zone 11 and modification of existing facilities in Zone 12 South option, due to nonconformance with existing land-use plans, policies, or controls." - The Appendix A of the summary does not even mention this "adverse impact". The side-by-side comparison with the other sites is approximately equal. Why was Pantex singled out for "adverse impact"? - In Volume II, page 4-176, it states that "However, the master plan (Pantex Site Development Plan) designates Zone 11 for applied technology (PX DOE 1995g.8.11). Therefore, there would be potential adverse effects to land use." It is not anticipated that the Applied Technology Division will expand to use the land in question. This is not an adverse impact and is a	5/09.01.04

TX-050

09 03 04 Comment Number 4

The impacts to the air quality at Pantex due to operational activities are identified in the various sections of the PEIS dealing with air quality. As an example, Section 4.2.4.3 identifies the emission sources associated with operations to include boilers for space heating, diesel generators and testing of emergency diesel generators, exhaust and road dust from delivery and employee vehicles, and toxic/hazardous pollutant emissions from facility processes.

The Summary of the Draft PEIS, which presents information from Chapter 4 on environmental consequences, was revised to remove all subjective or qualitative comparisons among sites such as "adverse impacts."

09 01 04 Comment Number 5

Land-use planning is a dynamic process in which plans must be refined to reflect new information or needs. Although a potential action would be inconsistent with the current site development plan, Pantex could revise the plan in accordance with the proposal. The Proposed Action would be in compliance if the change is approved. The Final PEIS was revised to reflect this condition.

Zone 11, a potential location for the Consolidation Alternative at Pantex, was deleted in the Final PEIS.

NO NAME SUBMITTED
PAGE 3 OF 6

very strict interpretation of a document written to describe existing land use. Changes can be made easily to the <i>Pantex Site Development Plan</i> to describe future land use that was not thought about at initial writing. In Volume II, page 4-176/177, it states for all alternatives that "alternatives would be consistent with the city of Amarillo's land-use plans, policies, and controls. In Volume I, page 3-147, "Within the State of Texas, land-use planning occurs only at the municipal level. The City of Amarillo comprehensive plan has designated land for future growth." These two references indicate that any construction at Pantex does not create "a potential for adverse impact to land resources...due to nonconformance with existing land-use plans, policies, or controls." In Volume II, page 4-856, it states "Nonetheless, future site development would be anticipated to be in conformance with the future land uses as designated by the Pantex Site Development Plan. As such, the various additive, aggregative land-use actions that would accumulate incrementally, although consuming land, would not change land use, or violate land-use plans, policies, or controls for the user. Proposed development would also be compatible with the industrial use visual character of the developed areas of Pantex." This is in direct opposition to the above "adverse impact" statement. VERIFY what policies actually exist for Pantex and is there any nonconformance issues. CONFIRM impression of what is stated in PEIS and the <i>Pantex Site Development Plan</i>.	5/09.01.04 cont.
On page S-19, under the Consolidation Alternative (S-20 Collocation Alternative, S-22 Disposition Alternative, Pt Disassembly/Conversion Facility, S-31 Verification Alternative, S-33 MOX Fuel Fabrication Facility, S-35 Evolutionary LWRs Alternative), the summary states "At all of the DOE sites under consideration, cultural and paleontological resources have the potential to be affected wherever there is ground disturbance due to construction activities. The side by side comparison in Appendix A states "Prehistoric and historic resources occur within the acreage that would be disturbed during construction." (Who chose these sites, adequately surveyed, use of other buildings, etc) For Pantex, Appendix A also states "It is unlikely that paleontological resources occur within the acreage disturbed during construction." Thus not all DOE sites are the same in this area.	6/09.07.04
On page S-19, under the Consolidation Alternative (page S-20 Collocation Alternative, S-28 Disposition Alternative, Pt Disassembly/Conversion Facility, S-30 Ceramic Immobilization Facility, S-31 Verification Alternative, S-35 Evolutionary LWRs Alternative), the summary states "Waste management at Pantex (both options) and SRS has the potential for adverse impacts where implementation of this alternative may require construction of sanitary, utility, and process wastewater treatment systems to treat nonhazardous liquid wastes.	7/09.11.04

TX-050

09 07 04 Comment Number 6

Paleontological resources are different from cultural (prehistoric, historic, and Native American) resources. At Pantex, paleontological resources are unlikely to be affected within areas of disturbance, while cultural resources (for example, historic resources) may be affected. The affected environment for these resources is discussed in more detail in Section 3.5.7 of the PEIS.

09 11 04 Comment Number 7

Based on comments received, the Summary of the Draft PEIS was revised to clarify the comparison of impacts and to delete reference to "adverse" impacts. All revisions made appear in the Summary of the Final PEIS.

The summary is inconsistent from paragraph to paragraph on pages S-19 and S-20. The second paragraph as stated above mentions adverse impact at Pantex, but does not mention adverse impact for Pantex in last paragraph on S-19 or S-20 second paragraph, or last paragraph for Collocation Alternative page S-20. The treatment of liquid nonhazardous wastes is the area of concern that may require construction of sanitary, utility, and process wastewater systems. Construction of additional facilities is not necessary due to the decrease of other activities (e.g. dismantlement) at Pantex and the existing facilities can accommodate this increase of liquid nonhazardous wastes. This is not an adverse impact.	7/09.11.04 cont.
On page S-19, under the Consolidation Alternative (Page S-20 Collocation Alternative, S-28 Disposition Alternative, S-31 Vitrification Alternative, S-30 Ceramic Immobilization Facility, S-31 Vitrification Alternative, S-35 Evolutionary LWRs Alternative), the summary states "Potential adverse interstate transportation impacts related to all DOE sites could occur because of the increased risk of traffic accident fatalities. It could be concluded that the addition of one vehicle trip to Pantex causes an increased risk of traffic accident fatalities. However in Volume II, in all of the alternatives, page 4-203 through 4-206, all alternatives state for traffic conditions "There would be no significant traffic impact to the local road network." If there is no significant traffic impact, then why does the summary state otherwise?"	9/10.02.00
On page S-19, under the Consolidation Alternative (Page S-20/21 Collocation Alternative), the summary states "The Consolidation Alternative would have adverse impacts to the following: ... biological resources at ... Pantex. But for construction of a MOX Fuel Fabrication Facility on page S-33, the summary states "At all DOE sites, except for Pantex, there would be the potential for adverse biological resource impacts because habitat disturbance and potential impacts to special status species during construction activities. For construction, there is either adverse impact or no adverse impact -- this example shows large inconsistencies in evaluations and conclusions drawn from basically the same data input.	10/09.06.04
On page S-20, under the Consolidation Alternative (S-35 Evolutionary LWRs Alternative), the summary states "... biological resources would experience adverse impacts under the Consolidation Alternative at all DOE sites. This is due to habitat loss ... In addition, the potential exists for adverse impacts to either Federal- or State-listed threatened and endangered or special status species at ... Pantex (both options) ... There is also the potential for adverse impacts to wetlands at Pantex (both options)." Page 3-166 in Volume I: "No critical habitat for threatened and endangered species as defined in the ESA (50 CFR 17.11; 50 CFR 17.12) exists on Pantex." Page 3-167 in Volume I: "There is little undisturbed habitat at Pantex that	11/09.06.04

TX-050

09 11 04 Comment Number 8

After discussion with Pantex representatives and review of the Pantex EIS (DOE/EIS-0225D), the impacts of liquid nonhazardous wastes have been reevaluated. The Final PEIS reflects that the existing wastewater treatment systems at Pantex are adequate to handle the increase for the Consolidation and Collocation Storage Alternatives.

10 02 00 Comment Number 9

The statement in the Summary on the potential adverse interstate transportation impacts concerns the human health impacts of moving radioactive material (Pu and uranium) to support the storage and disposition alternatives. This analysis concerns DOE material, is governed by Federal, State, local, and DOE regulations, and determines the number of fatalities due to movement of the material. The analysis is contained in Section 4.4 of the PEIS. The statements in the various socioeconomic sections concern local traffic conditions in regard to construction and operations workers that may be needed for the alternatives. This analysis concerns workers, is governed by traffic laws, and determines the effect of the local transportation network.

09 06 04 Comment Number 10

The proposed sites for the Consolidation Alternatives and the MOX Fuel Fabrication Facility were in different locations at Pantex and contained different habitat types (one being a previously disturbed area). Thus, the potential to disturb biological resources would also differ among these alternatives. The proposed site locations have changed and are reflected in the Final PEIS.

09 06 04 Comment Number 11

The Summary was revised to correctly reflect the analysis provided in Chapter 4. The official designation of critical habitat by the U.S. Fish and Wildlife Service (USFWS) does not determine the presence of, nor the possibility of, impacts to a threatened or endangered species. Regardless of the permanent or temporary nature of a species occurrence at Pantex, the potential impacts to those species attracted to the site are described. The word

would accommodate any of the threatened, endangered, and other special status species, other than the Texas horned lizard. Most of these species are attracted to the playas, which provide water and foraging habitat. "The above two sentences taken together do not merit an adverse impact." at Pantex. The summary side-by-side comparison states "Construction-related ground disturbance may increase the potential for sediment runoff to wetlands. During construction and operation, discharge of treated wastewater could cause increase open water areas in site playas which could lead to change in plant community composition. Discharges should increase aquatic habitat for amphibians." This is not adverse impact. Most of these playas are dry for most of the year. An increase of water would definitely help wetlands and provide improvement for the water and foraging habitat."	11/09.06.04 cont.
On page S-20, under the Collocation Alternative (Page S-29, Ceramic Immobilization Facility, S-35 Evolutionary LWRs Alternative), the summary states "Although the level of service on one or more local roads would decline during construction at INEL, Pantex, and ORR (all three options), the associated employment benefits would outweigh any short-term adverse local transportation impacts." In Volume I, page 3-175, it is stated that Traffic conditions on all of these roads (FM 693, 293, 2373) are typically free flowing with low volumes of vehicles capable of traveling at speed limits without interference due to congestion. Building projects in past have had no effect on traffic conditions at the plant and would not be expected to have "adverse local transportation impacts" in the future. The traffic volume would not be that great even with construction crews.	12/10.00.00
Inconsistency: Even though Pantex is included in sites used for analysis of Immobilization and Deep Borehole and Reactor categories (see second paragraph on page S-13), Page 22 (Page 32 MOX Fuel Fabrication Facility) states "Construction and operation of the pit disassembly facility would have no or negligible impacts to land resources, site infrastructure, air quality, noise, and geology and soils at any of the DOE sites used for analysis purposes." This statement is not consistent with other alternatives and associated evaluations and conclusions. Additionally, the above paragraph is not consistent with following paragraphs in the same sections.	13/09.00.04
On page S-28, under the Pu Conversion Facility paragraph, the summary states "Whereas the associated employment would have generally positive socioeconomic impacts at all of the DOE sites, the level of service on one or more local roads during the operations period would decline at INEL, Pantex, and ORR, leading to an adverse socioeconomic impact for the Pu conversion facility." In Volume I, page 3-175, it is stated that Traffic conditions on all of these roads (FM 693, 293, 2373) are typically free flowing with low volumes of vehicles capable of traveling at speed limits without interference due to	12/10.00.00 cont.

TX-050

"adverse" has been deleted as a descriptor of impacts. There are no anticipated impacts for wetlands at Pantex

The side-by-side summary comparison noted is presented consistently throughout the document. Both increases and decreases in stormwater and wastewater discharges may affect the open water areas in the playas and could lead to changes in both the plant and biotic populations living within and utilizing the playa. Also, increases in stormwater, wastewater, and operational discharges may increase the potential for sediment and affect the open water area and water quality within the playa. The impacts due to water discharge to playas are described as an increase in aquatic habitat and an alteration of wetland habitat; whether the changes to wetlands are positive or negative would be determined in site-specific environmental documentation.

10 00 00 Comment Number 12

The local transportation model used indicates that there would be a decline in the level of service during construction of the collocation facility, ceramic immobilization facility, and evolutionary LWR at Pantex. The model indicates there would not be a decline in the level of service during operation of these facilities. The statements in the Summary concern the level of service decline during construction not operation. A description of the Average Annual Daily Traffic (AADT) is included in Section 4.1.8 of the PEIS. This model uses six levels of service described in Table 4.1.8-1. A drop of one level of service is considered an impact in the PEIS. Although building projects in the past have had no effect on traffic conditions, the AADT model was applied to all sites so that a comparison can be made between them.

09 00 04 Comment Number 13

Based on comments received, the Summary was revised. There was no intention to portray Pantex, the Pantex region, or the Texas Panhandle region in a negative fashion. Each DOE site was analyzed and studied in the same manner and presented in the PEIS per these analyses and studies. All revisions made to the PEIS text are included in the Summary of the Final PEIS.

NO NAME SUBMITTED
PAGE 6 OF 6

congestion. Building projects in past have had no effect on traffic conditions at the plant and would not be expected to have "adverse local transportation impacts" in the future. The traffic volume would not be that great even with construction crews. In Volume II, page 4-203 through 4-206, all alternatives state for traffic conditions "There would be no significant traffic impact to the local road network". This is a large inconsistency and does not deserve to be described as an "adverse impact" in the summary.	12/10.00.00 cont.
On page S-29, under Ceramic Immobilization paragraph (S-31 Verification Alternative, S-32 MOX Fuel Fabrication Facility, S-35 Evolutionary LWRs Alternative), the summary states "The potential for adverse impacts would exist for land resources at Pantex, because use of the proposed site would not be in conformance with the <i>Pantex Site Development Plan</i>." In Volume II, page 4-176, it states that "However, the master plan (<i>Pantex Site Development Plan</i>) designates Zone 11 for applied technology (PX DOE 1995g:8, 11). Therefore, there would be potential adverse effects to land use." It is not anticipated that the Applied Technology Division will expand to use the land in question. This is not an adverse impact and is a very strict interpretation of a document written to describe existing land use. Changes can be made easily to the <i>Pantex Site Development Plan</i> to describe future land use that was not thought about at initial writing.	5/09.01.04 cont.

TX-050

NO NAME SUBMITTED
PAGE 1 OF 2

1. So slow on disposal. 2. With our present President we don't know from one day to the next what he is going to do. France is testing China is testing etc. It is foolish to be thinking of reducing the stockpile as it can be produced.	1/01.00.00	Comment Number 1
3 The environment damage that you may see is irreparable. This area is given to all the chemicals that is poisoning the human body by allowing the chemicals companies to put all their chemicals into our food supply which will harm all humanity in the U.S. a. which is worse "the pollutants" put out by Pantex that affects the local population. or b. all the chemicals that go into our food which affects the whole nation. It will hurt the economy of this city. It have another "pay roll" stemmed. The money if plans under plans to dispose of, and there are 100,000 tons of chemicals. -	2/01.00.00	Comment Number 2
4/09.08.04	Comment Number 3	Comment noted. Regulating the food supply companies is the responsibility of the Food and Drug Administration.
3/15.00.00	Comment Number 4	Phasing out existing storage facilities is the only activity associated with the PEIS alternatives that would eliminate jobs at Pantex. DOE estimates that only about five direct jobs would be lost due to the phaseout of the storage mission. Although any employment loss would be undesirable, the loss of five jobs would have no impact on the local or regional economy.

TX-051

NO NAME SUBMITTED
PAGE 2 OF 2

*million dollar cost ^{per} barrel - ^{not} other ^{cost} those.
I am not in favor of
cutting the payroll
of this city further.*

5/08.03.01

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

TX-051

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to the Borehole and Immobilization Disposition Alternatives. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

COMMENTS FORM
U.S. DEPARTMENT OF ENERGY
OFFICE OF PUBLIC AFFAIRS
WASHINGTON, D.C. 20545

NAME (Optional) _____
ADDRESS: _____
TELEPHONE: () _____

DISPOSITIONAL FEELS

The DOE has already decided against a plutonium-burning production and power reactor. There is continued pressure against production, equal mining from environmentalists.

Please, do NOT throw away huge amounts of energy without harnessing those potentials. We do not need to give it to CANADA, nor commercial entities. Let the government build a new reactor, burn the Pu, and supply the power to the nation. BE A DEPARTMENT OF ENERGY!

The Immobilization and Borehole options merely put-off 'til tomorrow the ultimate disposition. Imagine the costs when a borehole starts a phone.

1/08.03.01

2/08.03.01

TX-054

NO NAME SUBMITTED, IDAHO FALLS, ID
PAGE 1 OF 1

3-524

Comment ID: P0024
Date Received: April 18, 1996
Name: none given
Address: Idaho Falls, ID

Transcription:

My comments are the DOE has promised to get all that mess out, out there at the site, get it out of here in, I don't no when, 2000 something. Now they plan on putting 2 ton of the most deadly, long-lived substance there is, and I'm definitely against it. I'm a citizen here in Idaho Falls, and there are a lot like me who don't speak up, who are lost in the clamor of all the people who want the jobs, but we live here too. Thank you.

1/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at INEL. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-024

J. Christopher Noah, Sc., Ph.D.
527 McElmore's Lane
Evans, GA 30809
(706) 855-5121
jcr (706) 855-5166

May 3, 1996

U. S. Department of Energy
Storage and Disposition Draft PEIS Office
P.O. Box 23786
Washington, DC 20026-5156

VIA FAX

Dear Sir:

Thank you for the opportunity to present my views on the Storage and Disposition Draft EIS on April 30, 1996 in North Augusta, SC. As a follow up, I have additional points to be expressed. They are:

1. After years of study of the land use and environment of the Savannah River Site and the potential environmental impact this project may have; it is my conclusion that SRS can accommodate a project of this magnitude without adversely affecting the environment. Forty-five years of government control has actually enhanced the environment of SRS. This has been documented by the Savannah River Ecology Laboratory (University of Georgia) and the Savannah River Forest Station (USFS/USDA). However, there are indeed pockets of contamination that require attention. These can be controlled by institutional controls on future land uses.
2. Many large-scale future missions can be accommodated by SRS. Given the infrastructure, security, workforce competency, community support and land use, there is no reason why new missions such as this project cannot be located at SRS. This does not mean that development should be given carte blanche. Environmental controls, comprehensive planning and operational safeguards should be implemented. Having lived in Alaska during the construction of the Alyeska Pipeline, I saw first-hand how development and the environment could co-exist. However, this technological accomplishment did not come without a tremendous amount of work.
3. This and the other projects discussed at the EIS meetings on April 30, should be considered in one planning document (it does not have to be large). Besides being programmatically linked, future uses such as these should be judged in the aggregate. This would save time, resources and reduce confusion to the public and SRS employees.

1/08.03.01

2/11.00.08

M-167

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for SRS. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

11 00 08 Comment Number 2

Comment noted. DOE has an on-going effort in program integration.

NOAH, J. CHRISTOPHER, EVANS, GA
PAGE 2 OF 2

Comment Number 3

12 01 00

Comment noted.

4. Most importantly, careful land use planning should be undertaken prior to this or any other large scale projects. Section 101 of NEPA generally states that planning should be undertaken and coordinated by the federal government. However, Section 102 specifically states that planning is very important and should be utilized. This was reiterated by "The Father of NEPA," Dr. Lyndon Keith Caldwell, when he visited SRS on April 2. Land use planning studies concerning large federal facilities in other agencies, other DOE sites and SRS have yielded significant results - Most notably in environmental protection, consolidation of resources and savings to the public.

5. Finally, there should be a concerted effort to open Yucca Mountain. It is difficult to view this project in fair terms if no end-state of nuclear materials is identified.

To provide a little background on myself, please see the attachment.

Thank you again for considering my comments.

Sincerely,

Christopher Noah

attachment

3/12.01.00

M-167

NORRIS, KAREN, BOULDER, CO
PAGE 1 OF 2

15 00 00
 Comment noted.

Comment Number 1

Date Received: 06/12/96
 Comment ID: P0050
 Name: Karen Norris
 Address: 1035 Adams Circle, Apt #112
 Boulder, CO 80303

Transcription:

Hi, my name is Karen Norris and I live at 1035 Adams Circle, Apt #112 in Boulder, Colorado 80303. Anyway, I was going to make a written comment, and this guy with an Environmental Master's Degree and a Chemical Engineering Bachelor's Degree screwed me up because he didn't like the way I was thinking, and I know its like after the seventh. He didn't like that I wanted to ship it up into outer space and have extra-terrestrial help. The extra-terrestrials are like a cure, and I wanted y'all to give up the information because our planet is so overloaded that it could -- the extra terrestrials are here because we could blow it up -- if our planet blew it would really screw theirs up and the chain reaction, and then the universe and well, he didn't like the space blast. And I don't like the National Academy of Sciences space blast either, because -- but you just gotta get a hold of E.T. I want to neutralize it or also I wanted to stabilize, vitrify it and throw it down the gol dam Nevada nuclear test hole. I'm sure I could get enough Indians to go along with that one, Native Americans, but he didn't like my thinking -- Scott Haffield and he's from Boulder and so he wouldn't help me with my written comments. So why don't you just -- Anyway, I got a Rocky Flats belt buckle from the DOE -- this DOE guy one time. Well anyway, in 1989 John Kudurka, he was the head manager of waste disposal, anyway like for three years previous to 1989, I had to negotiate with his head manager at waste disposal, Rocky Flats for three years. He couldn't tell me about the accidents he saw and all this stuff, and I'd approve extra terrestrial -- he was going to do something about the accident. Anyway, in 1989 he finally came up with how the heck to nail Rocky Flats without a permit, no permit -- DOE, EPA, FBI cover-up. In 1989, they finally shut them down, and I called them up and I nailed them -- he told me how to do it. Anyway, he worked at Rocky Flats, maybe he still does I don't know, I haven't seen him for a lot of years now. Anyway after that, I got a gol dam belt buckle after I told this DOE guy everything I knew about Rocky Flats, and I got one of these belt buckles -- those trinkets that weren't supposed to be made there, and according to this DOE guy it was a Lawrence Livermore favor or something. It was a belt buckle that looked like an atom spinning around. Actually I think you all owe me a Lawrence Livermore favor. So lets neutralize it or let's do the extra-terrestrial space blast. You know the National Academy of Sciences space blast. Just get a hold of the E.T.s or I want to neutralize it or I want to them vitrify it and stabilize it, vitrify it, and throw it down the Nevada nuclear test hole, and I stopped nuclear testing. And our bring back POW-MIA from Vietnam. Anyway, I called the Pentagon, my political code name is Dolly. I'm not really a Dolly. Anyway, I got a gol dam Rocky Flats belt buckle, and you should just extend your comment period since the gol dam Environmental Master's Degree and Chemical Engineering Scott Haffield didn't like my kind of thinking. Anyway -- its like, well, what's your thinking? Hey, well, tell-- I like the DOE because they're lying off all the people at Rocky Flats and forget the buy-out. What are you doing paying those people for trying to you know, create mass genocide? F--- the buy-out. Cut your budget, get rid of them. Anyway and I don't know, tell the head Navy lady that took over, since the head guy at Rocky Flats quit or

1/15.00.00

P-050

NORRIS, KAREN, BOULDER, CO
PAGE 2 OF 2

something and she's you know like our -- tell Atlantis, I don't know. Let us know about the extra terrestrials even though, like... Well anyway, let me know about the extra terrestrials so they can possibly help. Try to neutralize it, you know, because I don't care how much it costs -- they wasted so much money already is the thing, and Germany is not a superpower, we can neutralize it. Anyway, or else I want to vitrify it, stabilized vitrification and throw it down the Nevada nuclear test hole. Plug that test hole up. There's no more nuclear testing. There's a total comprehensive underground nuclear test ban treaty with China and France and you know, get with it, you know. World peace. Thank you.

P-050

NORRIS, KAREN, BOULDER, CO
PAGE 1 OF 2

Comment Number 1

15 00 00

Comment noted.

Comment ID: P0042
 Date Received: May 8, 1996
 Name: Karen North
 Address: 1035 Adams Circle, Apt. #112
 Boulder, CO 80303
 Phone: (303) 443-7854

Transcription:

Call #1 - In honor of Project Phoenix and the Seti Institute and me as a citizen. We would like you to stabilize it and use vitrification and shove the glass logs directly down the Nevada Nuclear Test Site hole. Thank you. 1/15.00.00

Call #2 - Actually, we would like you to stabilize it, use vitrification, and then shove it all down the Nevada Nuclear Test hole or Test Site. Actually, my dad is really working on a plan for the International Alliance of Atomic Veterans this year. But it's like top secret so I can't tell you. Actually, I think that the government [unintelligible] of an extra terrestrials. I'm a native American Indian, cover up too. I have never heard of people that tell the government to get off their land, and to give up ETS - extra terrestrials - and in honor of Project Phoenix and the Seti Institute, we'll all want the same. The Seti Institute is located in Mountainview, California. Anyway, I would like to wish the Department of Energy Good Luck. And I would really like to thank them for the major layoffs at Rocky Flats, and thank you Hazel O'Leary, because if we didn't bitch so much, nothing would happen. I don't know, you know. Actually, I like the layoffs coming up but then I heard - somebody I work with's brother works at Rocky Flats. They laid off so many people that they can't keep up with the barrels, which is OK cause they nailed them with barrels. I nailed Rocky Flats of leaking barrels of tech. I had to call a tech - Chemical Hazard - Solvent. You know, but it's like no permit. Yeah it's me, I'm not dead yet. Well anyway, tell Hazel O'Leary that I have basically - [hung up]

Call #3 - I happen to have one of those [unintelligible] that wasn't supposed to be made at Rocky Flats. It was given to me by the DOE. It looks like a belt buckle with atoms spinning around. I would like to have a meeting with the total Department of Energy on what to do with this Lawrence Livermore favor. [unintelligible] Anyway, John Kazwercio was the head manager of waste disposal in like 86-89 and he told me how to actually like he wasn't supposed to tell me this, because he had a contract signed with like whatever. Anyway, I like nailed Rocky Flats without a permit for leaking barrels of, I had to call it tech. Anyway betraying the Department of Energy and the EPA and the FBI cover-up, I'm not a grand juror. I have a Rocky Flats belt buckle and I would like to negotiate. The belt buckle wasn't supposed to be made there. It's a Lawrence Livermore favor. Anyway, good negotiator, my boyfriend has his Master's degree in environmental engineering and his Bachelor's in Chemical Engineering, and I also call up the United States Command Center, they know me. I am for Hazel O'Leary and the DOE is like laying off of the people. Rocky Flats is scared. How do I know like about the buyout, because I'm one of the best. Could you please tell the Energy Secretary to call me up 1-303-443-7854. My name is Karen North. Tell the DOE that we would like the - this is what we want - me and Project Phoenix and the Seti Institute which is in honor of the search for extra terrestrial

P-042

NORRIS, KAREN, BOULDER, CO
PAGE 2 OF 2

intelligence. I could give you a couple of numbers to call. When the DOE asked me who I was and why I was there, this is not a joke. So why don't you research me, and find out about Project Phoenix and Seti.

Call #4 - I would like you all to stabilize it and use vitrification and send those glass logs directly into the Nevada Nuclear Test Site to stop nuclear testing. The stupidity of the total Department of Energy and complete humiliation of knowing man on Earth. I mean - excuse me I'll try again - I'm Karen North from Boulder - and I really feel that - Actually you know I call up the United States Command Center, United States Pentagon, I'm friends with Seti and Project Phoenix and actually I'm like - the Department of Energy are really you know dummies [unintelligible]. It's so hard to have to tell you how stupid you are.

P-042

NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 1 OF 9



Box 104, Uxbridge, Ontario, L9P 1M6
Tel/FAX 905-852-0571 nucaware@wchupc.org

FAX RECORD

Date: Thursday, June 6, 1996

202-586-2710

To: U.S. Department of Energy
Office of Fissile Materials Disposition

From: Irene Kock
Nuclear Awareness Project

Total pages (including cover): 8 pages + cover sheet

Comments:

Comments re: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Please note that attachments and original submission are being sent
express post -- attachments are not included with this fax

If this fax is incomplete please call 905-852-0571 or 905-852-3044
for re-transmission

F-053

NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 2 OF 9



Box 104, Uxbridge, Ontario L9P 1M6
Tel/Fax 905-852-0571 nucaware@web.apc.org

June 6, 1998

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington D.C. 20526-3786 U.S.A.

BY FAX: 202-506-2710 (Original in the mail with attachments)
Re: Storage and Disposition of Weapons-Usable Fissile Materials Draft
Programmatic Environmental Impact Statement (PEIS).

To whom it may concern,

Attached please find a submission from Nuclear Awareness Project on the topic of the proposed use of mixed-oxide (MOX) fuel, containing plutonium from dismantled U.S. nuclear warheads, at the Bruce 'A' Nuclear Generating Station. Our submission is endorsed by the following environmental organizations: Concerned Citizens of Manitoba, Saskatchewan Inter-Church Uranium Committee, and FACTS - For A Clean Tomorrow Site (New York). The MOX-CANDU reactor proposal is noted in the Department of Energy (DoE) document Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement as one of the options under consideration by the DoE for plutonium disposition.

Nuclear Awareness Project is a non-profit environmental organization founded in 1980, dedicated to raising public awareness about nuclear issues and energy alternatives in Ontario, around the Great Lakes basin and across Canada. The group has over 300 members and supporters, and conducts research and public education programs, in addition to publishing a newsletter and operating a public resource centre.

We have reviewed the proposal Plutonium Consumption Program - CANDU Reactor Project, Final Report, July 1994, by AECI. Technologies, as well as the relevant sections of the DoE PEIS. The attached submission outlines our views on a range of issues regarding the proposal. Nuclear Awareness Project does not support the importation of plutonium in any form into Canada. We urge the DoE to rule out the option of using CANDU reactors located in Canada for plutonium disposition purposes. We believe that a better alternative would be immobilization of the plutonium within the United States.

1/08.03.01

2/08.03.01

F-053

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input. In addition, according to the Canadian Government (see letter sent by the Canadian Embassy in Washington, DC, dated June 6, 1996, reproduced in this CRD) an appropriate level of analysis by Canada would be required before any decision on burning Pu in a CANDU reactor is implemented. Before implementation, further negotiations between the United States and Canada will be required as this will include actions on the disposal of the spent fuel.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 3 OF 9

Sincerely,

Irene Kock

Irene Kock

attachments

c.c. Concerned Citizens of Manitoba

Dave Taylor

674 Riverwood Ave.

Winnipeg, Manitoba R8T 1K4

Inter Church Uranium Committee

Philip Penna

P.O. Box 7724

Saskatoon, Saskatchewan S7H 4R4

FACTS - For A Clean Tonawanda Site

Jim Rauch

P.O. Box 668

Kennore, New York 14217-0568

F-053

NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 4 OF 9



Box 104, Uxbridge, Ontario L9P 1M6
Tel/Fax 905-852-0571 nucaware@web.apc.org

June 8, 1996

Submission to the U.S. Department of Energy Regarding the
Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Capacity Factors and Reliability of CANDU Reactors

The Atomic Energy of Canada Limited (AECL) proposal assumes that the four Bruce 'A' Nuclear Generating Station reactors will be refueled regardless of whether or not the mixed-oxide (MOX) fuel scheme is implemented, and that these reactors will operate at an average capacity factor of 80% for a further 25 year period. These assumptions are inappropriate, given current debates about the future of the electricity sector in Ontario, and given operating experience at CANDU reactors.

The AECL Final Report *Plutonium Consumption Program - CANDU Reactor Project* notes:

"It is assumed for the purposes of this study that the Bruce NGS A units will be refueled because there is a demand for electricity."

Refueling is the rebuilding of a CANDU reactor core where all fuel channels are replaced at a cost now estimated by Ontario Hydro at about \$350 million per reactor.⁸ The DOE should note that the Bruce reactor 2 was shut down in 1985 to avoid this cost and other major repairs, primarily to steam generators. The other 3 reactors are scheduled for refueling starting in 2000, but could instead be shut down at that time. The Bruce 'A' Station began operations between 1977 and 1978. It is unlikely that Ontario Hydro will be able to justify the expense of refueling its aging reactors when faced with increasing competition in the electricity sector.

The AECL Final Report also notes:

"... it is assumed that during the 25 year mission time the average capacity factor of the units is 80%, which is generally consistent with Ontario Hydro's experience..."

A review of capacity factors for CANDU reactors in Ontario shows that the 80% capacity factor target is not realistic. Bruce 'A' is approaching 20 years of operation, and trends show that CANDU reactor performance deteriorates with age. The 1994 annual and the lifetime capacity factors for the Bruce 'A' Station are shown in Table 1.

01 03 00 Comment Number 3

Should the CANDU Reactor Alternative be chosen for Pu disposition, further negotiations between the U.S. and Canadian Federal and Provincial Governments will be required before implementation, as well as business negotiations with reactor owners. These negotiations will include performing further environmental analyses, as appropriate.

3/01.03.00

F-053

Table 1: Annual and Lifetime Capacity Factors for the Bruce 'A' Nuclear Generating Station.⁴

Bruce 'A' Reactor	Annual Capacity Factor for 1984	Lifetime Capacity Factor to Dec. 84
1	53.0	68.0
2	53.4	58.0
3	37.6	75.0
4	50.6	72.2

The Pickering 'A' Station is a case in point, since the four Pickering 'A' reactors were refueled between 1983 and 1983. Reactors 1 and 2 were refueled prior to 1980, and post-refueling performance averaged only 70% for the five year period from 1980 to 1984. See Table 2.

Table 2: Post-Refue Capacity Factors for Pickering Reactors 1 and 2.⁵

YEAR	Pickering 1	Pickering 2
1980	67	65
1981	67	72
1982	65	91
1983	77	85
1984	19	88
5 year average capacity factor = 70%		

The degree of over-optimism and actual error in AECL's two assumptions about reactor refueling and performance expectations brings into question the validity of all of the findings in the AECL Report.

Costs and Subsidies

The total gross cost for using plutonium fuel in CANDUs is estimated by AECL at over \$2.2 billion (1983 U.S.\$). This price does not include the cost of refueling the Bruce 'A' reactors or improving security at the Bruce site. The price of plutonium fuel production and shipping is estimated at \$70 million per year — about three to four times the cost of CANDU uranium fuel. It has been reported that Ontario Hydro representative John Lust has said that the DOE will pay the difference between the cost of CANDU uranium fuel and mixed-oxide fuel, estimated at \$54 million per year.⁶ Yet the budget presented by AECL for this project doesn't mention any subsidies to Canada or

NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
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01 03 00 Comment Number 4
Once the Pu is converted to MOX fuel, it is no longer considered weapons-usable without extensive chemical processing and, therefore, would not involve the Canadian nuclear programs in the military nuclear programs of foreign powers.

3/01.03.00
cont.

Ontario Hydro from the DoE. What is the DoE's policy on subsidizing utilities which use MOX fuel made from DoE plutonium?

If the DoE does not pay for retooling and security improvements at Bruce 'A', then Ontario rate-payers will have to pay those costs, which could easily approach \$1 billion to refurbish and rehabilitate 2 reactors and 'harden' the Bruce Nuclear Power Development against terrorist attacks. This is in addition to paying what it would cost to use CANDU uranium fuel, and the usual operation, maintenance and administration costs, as well as capital modification costs associated with the reactors. This is not a bargain for Ontario electricity rate-payers, as is being implied by Ontario Hydro — it is a burden. Other cheaper and safer energy supply and demand management options are readily available. The pressure to implement full cost accounting and integrated resource planning in decision making on electricity options will only increase as Ontario enters into an era of increased competition in the electricity sector. It is likely that reactor rehabilitation will not be economical compared to these other options.

Spent Fuel Management and Burial

The end result of using plutonium fuel in CANDU reactors under this proposal is that foreign military radioactive waste would remain in Canada. From the environment community's point of view, accepting radioactive waste from a foreign country would set a dangerous precedent. The issue of high level radioactive waste burial in Canada is currently being reviewed by a Federal Environmental Assessment Panel. The current proposal, put forward by AECL, involves burial of the wastes in the Canadian Shield. Many reviewers, including the Atomic Energy Control Board, Environment Canada and the Panel's own Scientific Review Group, found significant technical deficiencies in the AECL proposal, which took almost 15 years to prepare. Canadians are far from achieving consensus on the best management strategy for nuclear fuel wastes, and there has been no public consultation on the option of accepting foreign wastes for burial here. Therefore, the assumption in the DoE PEIS, that "Spent fuel generated by a CANDU reactor would be accommodated within the Canadian spent fuel program" is unwarranted and premature. Nuclear Awareness Project certainly does not support the storage or burial of foreign radioactive wastes in Canada.

1/08.03.01
cont.

Canada's Non-Proliferation Policy

The use of plutonium fuel would violate the spirit of Canada's non-proliferation stance, which is intended to isolate the Canadian nuclear industry from the military nuclear weapons programs of other countries. This plutonium fuel scheme would integrate Canada into the nuclear weapons program of the United States through: 1) making Ontario Hydro a commercial recipient of military fissile material; 2) undermining security measures within Canada for fissile plutonium of foreign origin; and 3) providing radioactive waste disposal for foreign decommissioned nuclear weapons. Nuclear Awareness Project supports the maintenance of a clear separation between Canadian nuclear programs and the military nuclear programs of foreign powers.

4/01.03.00

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NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,

IRENE KOCK

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01 03 00 Comment Number 5

Should the CANDU Reactor Alternative be selected at the ROD, agreement with the Canadian Federal and Provincial Governments would be reached on the Pu disposition process, including appropriate environmental analysis with public involvement.

Environment and Public Health Hazards

The operation of CANDU reactors in Ontario causes negative environmental and public health impacts due to routine emissions of radioactive pollution, especially tritium, which is found at levels far exceeding 'background' in the vicinity of all CANDU reactors. See the attached excerpt from Nuclear Awareness Project's Spring 1986 newsletter "Tritium Hits Port Eglar" for details of a recent incident at Bruce "A" (Attachment A).

3/01.03.00
cont.

The possibility of severe accidents at the Bruce "A" reactors cannot be ruled out, and the risk becomes greater as the reactors age. Such an accident would likely impact the entire Great Lakes basin. The enclosed excerpt from the Nuclear Hazard Report 1991 - 1992 addresses some of these reactor safety concerns in detail (Attachment B). A major concern is the risk that trade-offs are being made between safety and maintenance and capital costs, as outlined in section 3.1 of the Nuclear Hazard Report.

The AECL proposal is incomplete in a key area that concerns public safety. Plutonium fuel can become "critical" under certain conditions. Transportation and handling accidents could be disastrous for those exposed to radiation. The AECL proposal fails to provide details of the circumstances under which this may happen and how each situation might be prevented or mitigated. AECL simply notes that:

"Accident scenarios with MOX fuel may be postulated which could lead to criticality concerns. These range from accidental immersion in light water during transportation... The complete range of such accidents would be analyzed as part of the licensing basis for MOX operation, however, based upon a review of some scenarios no difficulties are foreseen."

To leave a full assessment of criticality risks to the licensing stage is unacceptable. The AECL proposal fails to address any accident conditions, only outlining some possible storage configurations to show how the fuel would behave under normal conditions.

There is no guarantee that the plutonium fuel scheme will undergo an environmental assessment at either the provincial or federal level. An exemption was granted to the Bruce "A" Station in 1976 under the Ontario Environmental Assessment Act, and the use of MOX fuel may come under this exemption. The understanding would be regulated by the Atomic Energy Control Board, which may not require a public hearing under Canada's Environmental Assessment Act. Nuclear Awareness Project is concerned that every effort will be made by our governments at the provincial and federal level to avoid an environmental assessment on this proposal. We believe that it is unacceptable for the DoE to be considering the MOX-CANDU reactor scheme in the absence of a firm commitment from the government of Canada to conduct a comprehensive Environmental Assessment with full public hearings under the Canadian Environmental Assessment Act.

5/01.03.00

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NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
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01 03 00 Comment Number 6

The Department of Energy is committed to the NEPA process which includes consideration of all public comments. All comments are given equal consideration in the decisionmaking process.

Public Notification and Access to Information

Nuclear Awareness Project was pleased to receive the U.S. Department of Energy's *Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement*, and have the opportunity to comment. However, it was only through a conversation with colleagues in the U.S. that we knew about this Environmental Assessment at all. To the best of our knowledge the DoE did not provide notification to the Canadian public about this review process. Certainly Ontario Hydro and AECL made no effort that we know of to inform the Canadian public of this opportunity to comment on their proposal. We hope you will give due consideration to our comments, even though the DoE is not accountable to Canadians.

6/01.03.00

Nuclear Awareness Project has been aware of the proposal to use mixed-oxide fuel containing weapons-grade plutonium in CANDU reactors since 1984, and began requesting a copy of the proposal that year. After over a year of run-around and unfulfilled promises by Ontario Hydro to provide the document, it was requested formally under Freedom of Information legislation. Ontario Hydro refused to release the report and instead, directed us to obtain a copy from the U.S. Department of Energy. The DoE eventually directed us to AECL Technologies Inc. in the U.S., and a "Controlled Copy" of *Plutonium Consumption Program - CANDU Reactor Project* was received in April 1986. Ontario Hydro and AECL have deliberately withheld vital information on the MOX fuel proposal as long as possible in order to stifle public debate. This is unacceptable behaviour from any corporation, let alone provincial and federal crown corporations.

Ontario Hydro has also been uncooperative in releasing information on other aspects of the proposal, such as public opinion polls. Nuclear Awareness Project requested a copy of the results of a public opinion poll conducted for Ontario Hydro on the plutonium fuel issue in 1985. The script of the poll was released, however, Hydro refused to reveal the results and analysis under the Freedom of Information Act, noting: "The survey will be used in Federal Cabinet policy discussion. Release of the survey would interfere with a fair and unbiased Cabinet review of the issue". Hydro's reply also noted that: "... release of the survey could generate negative news coverage that would affect the economic interests of Ontario Hydro."

Conclusion

Nuclear Awareness Project does not support the importation of plutonium fuel for use in the Bruce 'A' Nuclear Generating Station for the following reasons:

- In order to use MOX fuel at two reactors, the Bruce 'A' Nuclear Generating Station will require in the order of \$1 Billion in repairs and security upgrades which would have to be paid by the electricity rate-payers of Ontario;
- the Bruce reactors are otherwise likely to be shut down early, saving capital repair costs, as well as operating, maintenance and administration costs — electricity can be supplied, or demand managed more cost effectively;

3/01.03.00
cont.

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**NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
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- the use of MOX fuel would set a precedent for Canada to become a dumping ground for foreign military radioactive waste, an undesirable prospect for many Canadians;
- the use of MOX fuel would reverse Canada's longstanding non-proliferation policy of isolating itself from foreign nuclear weapons programs;
- the use of MOX fuel would create unprecedented security problems to prevent theft or diversion of plutonium;
- the use of MOX fuel would pose a public health and environment threat, since plutonium is one of the most carcinogenic substances known, and there is a risk of critically accidents.

3/01.03.00
cont.

Therefore, Nuclear Awareness Project urges the Department of Energy to rule out the option of using CANDU reactors located in Canada for plutonium disposition purposes. We believe that a better alternative would be immobilization of the plutonium within the United States.

Endnotes

1. AECI Technologies Inc., *Plutonium Consumption Program - CANDU Reactor Project*, Final Report, July 1994, U.S. DoE Contract DE-AC03-94SF20218, p. 1-10.
2. Minkiewicz, M., "Plague-ridden Bruce reactor shutting down after half bar", *Globe & Mail*, August 31, 1995.
3. AECI Technologies Inc., p. 1-10.
4. *Nuclear Engineering International*, April 1995, p. 23.
5. Atomic Energy Control Board Staff Annual Reports on the Pickering Nuclear Generating Station.
6. Silver, R., "Ontario Hydro Nuclear Eyes Pu Burning as Way to Save Bruce-2", *NuclearWeek*, December 22, 1994.
7. For more information consult the Nuclear Fuel Waste Environmental Assessment Panel, Canadian Environmental Assessment Agency (CEAA), 819-953-0172.
8. U.S. Department of Energy, *Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement*, Summary, February 1993, p. 8-16.
9. AECI Technologies Inc., C-20.
10. Letter to Irene Kock, Nuclear Awareness Project, from S.M. Ling, Corporate Records and Freedom of Information Officer, Ontario Hydro, December 11, 1995.

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IRENE KOCK
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Box 104, Uxbridge, Ontario, L9P 1M6
Tel/FAX 905-852-0571 nucaware@webcap.org

FAX RECORD

Date: Thursday, June 6, 1996

202-596-2710

To: U.S. Department of Energy
Office of Fissile Materials Disposition
From: Irene Kock
Nuclear Awareness Project
Total pages (including cover): 8 pages + cover sheet

Comments:

Comments re: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Please note that attachments and original submission are being sent
express post -- attachments are not included with this fax

If this fax is incomplete please call 905-852-0571 or 905-852-3044
for re-transmission

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**NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 2 OF 5**



Nuclear Awareness Project

Box 104, Uxbridge, Ontario L9P 1M6
Tel/Fax 905-832-0371 nucaware@web.apc.org

April 22, 1996

Mr. Greg Rudy, Acting Director
Office of Fissile Materials Disposition
U.S. Department of Energy
P.O. Box 23786
Washington, D.C. 20026-3786 U.S.A.

BY FAX --> 202-586-2710

Dear Mr. Rudy,

I am writing to request that you extend the deadline for comments on the U.S. Department of Energy's "Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement" (PEIS) by at least 30 days. I understand the current deadline is May 7, 1996.

Nuclear Awareness Project is working to prepare comments on the option for plutonium disposition which involves the use of mixed-oxides (MOX) fuel in CANDU reactors. I originally contacted you for details of the review on February 27, and later requested a copy of the PEIS from you on March 16, which I received on March 22. This efficiency for document distribution is in stark contrast to my experience in trying to obtain a supporting document to the PEIS, specifically reference AECL 1994a.

After receiving the PEIS, I proceeded to look for details of the MOX-CANDU option, only to find that the details aren't in that documentation. Our organization has been well aware of the MOX-CANDU proposal since 1984, but have been unable to obtain technical details from the Canadian Office of Atomic Energy of Canada Limited (the Canadian official in charge of the MOX-CANDU project) until after a full year of run-around from Ontario Hydro. We filed a formal request under the Freedom of Information legislation, asking Ontario Hydro for a copy of the technical proposal. Hydro told us to get it from the Department of Energy (see attached copy of letter), which was a surprise to us.

I requested a copy from Mr. Cantor with the DOE, in a letter December 8, 1995. In late February, I followed this letter with a phone call, since I hadn't received anything. Mr. Cantor's response was to Mr. Phil Campbell at AECL Technologies in Ontario. I phoned Mr. Campbell on February 23, and he agreed to send me the MOX-CANDU proposal. Meanwhile, I became familiar with the PEIS review process and was in touch with you. I had expected to find the technical details of the MOX-CANDU option in the PEIS, as I mentioned above, however, I did finally receive the "Technologies document - Plutonium Consumption Program: MOX-CANDU Project" in early April.

...2/

08 01 00 Comment Number 1

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

08 02 00 Comment Number 2

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board. All information was and will continue to be provided upon request as well as in the DOE Public Reading Rooms.

1/08.01.00

2/08.02.00

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NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
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All this background is just to point out to you the serious difficulty we have had in obtaining a document which forms the basis for the sections in the DOE PEIS on the MOX-CANDU option. I believe an extension of at least 30 days should be provided to make up the time lost due to complete documentation being unavailable. I look forward to your reply.

Sincerely,

Irene Kock

Irene Kock

- 2 page letter attached (included with original in the mail)

2/08.02.00
cont.
1/08.01.00
cont.

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NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
PAGE 4 OF 5



700 University Avenue, Toronto, Ontario M5G 1X6

Telephone: (416) 592-2736 Fax: (416) 592-5514

December 7, 1995

Nuclear Awareness Project
ATTN: Ms. Irene Kock
Box 2331
Oshawa, Ontario
L1H 7V6

Dear Ms. Kock:

Request for Access to Information
- Reference Number: 950062

I am responding to your access request received under the Freedom of Information and Protection of Privacy Act on November 10, 1995.

Access is denied to the following document:

- Plutonium Consumption Program - CANDU Reactor Projects

Access is denied to this record in accordance with section 22(a) of the Act, as this record has recently been published and is currently available to the public. You can request a copy from:

US Department of Energy
• Fissile Materials Management
ATTN: Howard Cantor
Technical Director
Forrestal Hall
Washington, D.C.
USA

No other studies or reports exist that have been prepared by Ontario Hydro on the possible use of mixed-oxide fuel containing plutonium from dismantled nuclear warheads.

The person responsible for making the decision regarding access is L.E. Leonoff - Senior Vice-President, General Counsel and Secretary. You may request a review of this decision by contacting the Information and Privacy Commissioner within 30 days of receiving this response.

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NUCLEAR AWARENESS PROJECT, UXBRIDGE, ON,
IRENE KOCK
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Ms. Irene Kock

-2-

December 7, 1995

In the event that you wish to launch an appeal to the Information and Privacy Commissioner, please provide the Commissioner's Office with 1) the request reference number which Ontario Hydro assigned to your request; 2) a copy of the decision letter; and 3) a copy of the original request for information which you sent to us.

Sincerely,



S.M. Leng
Corporate Records and Freedom
of Information Officer
Corporate Records and Freedom
of Information Department
H18 A17

M. Gamble:MD

M-058

01 06 00 **Comment Number 1**

Both the PEIS and the nonproliferation analysis document will be used, along with cost, schedule, and technical analyses in the decisionmaking process, to support the ROD.

08 01 00 **Comment Number 2**

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days. The documents related to technical, cost, and schedule analyses were made available to the public beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. These analyses will be considered along with the PEIS by the decisionmaker in reaching the ROD. The public had the opportunity to provide input on the studies before the ROD.

01 06 00 **Comment Number 3**

The purpose of the Proposed Action is, in part, to establish the technical and program infrastructure that will enable the United States to take unilateral action or negotiate reciprocal actions with other nations for the disposition of surplus weapons-usable Pu. This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of the cost, schedule, technical, and nonproliferation policy impacts are described in separate documents and will be considered in DOE's decision. These documents were made available for public review beginning in late July and October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the nonproliferation analysis, *Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives*, as it relates to the Proposed Action and alternatives.

The analysis of the nonproliferation impacts examines, among other things, the risk of theft, risk of reversal, and arms reduction impacts for the various Reactor Alternatives using MOX fuel and for the Immobilization Alternatives.

COMMENTS ON THE DEPARTMENT OF ENERGY'S STORAGE AND DISPOSITION OF WEAPONS-USABLE FISSILE MATERIALS DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT	Nuclear Control Institute	June 7, 1996	EXECUTIVE SUMMARY	Non-Proliferation Issues	1/01.06.00
The nonproliferation analysis is an integral element of the screening criteria and decisions made in preparing the DPEIS, and should therefore be made a formal part of the PEIS, rather than the subject of a separate process.					
The Secretary of Energy should extend the public comment period until 45 days after all relevant support documents, including the cost and non-proliferation analyses, are made publicly available.					2/08.01.00
The 1994 NAS study on the disposition of excess weapons plutonium proposed three proliferation risk factors for use in comparing plutonium-disposition options: risk of theft; risk of reversal; and impact on arms reduction. These criteria should be incorporated into the PEIS's non-proliferation analysis.					3/01.06.00
Judged by each of these criteria, the option of irradiating weapons plutonium in nuclear reactors (the MOX option) poses far greater proliferation risks than the option of vitrifying plutonium with highly radioactive waste (the VHLW option).					4/01.06.00
The MOX option presents a greater risk of diversion primarily because of the fuel-fabrication stage, a process that is difficult to safeguard effectively. Such uncertainty could severely limit the trust nations place in an international nuclear arms-reductions and non-proliferation regime predicated upon recycling weapons plutonium as fuel for reactors.					5/01.02.00
The DPEIS fails to consider the "can-in-a-canister" vitrification option, now being developed at Savannah River and Livermore, despite the great promise it has shown. It must receive specific analysis and consideration in the PEIS.					6/01.06.00
The proliferation resistance of the final waste forms largely determines the potential reversibility of plutonium disposition, but the DPEIS fails to examine these issues. A detailed comparative analysis of plutonium retrievability from spent MOX fuel and immobilized glass and ceramic waste forms must be included.					
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• Isotopic composition of the residual plutonium in the final waste forms is an inappropriate criterion by which to assess proliferation risks because it perpetuates a dangerous myth that reactor-grade plutonium cannot be used to make workable weapons. The ability to construct a weapon from reactor-grade plutonium was demonstrated decades ago. It is dangerous even to consider it an open question. Isotopic degradation does not pose a substantial barrier to re-militarization of weapon plutonium, and therefore does not constitute a compelling argument in favor of the MOX option—a conclusion shared by the 1995 NAS study.	7/01.06.00
• The MOX option would clearly encourage the civil use of plutonium. The U.S. Government would be engaging in MOX activities for the first time on a commercial scale, legitimizing the use of MOX in civil nuclear power programs. Such a sea change in U.S. policy would confuse and complicate U.S. non-proliferation diplomacy. It would send the wrong signal to Western Europe, Japan, and other non-nuclear-weapon states.	8/01.06.00
• The MOX option sends the wrong fuel cycle policy signal in three ways. First, the MOX option effectively declares that plutonium has an asset value, and that the energy contained within it should be viewed as a national asset. Second, the MOX option suggests that a plutonium fuel cycle can be effectively safeguarded, and the use of MOX for weapons plutonium disposition would surely be cited by plutonium advocates as a government "seal of approval" on the process. Third, the MOX option would be portrayed as giving credibility to the claim that plutonium recycle in light-water reactors (LWRs) is essential to nuclear waste management.	9/01.06.00
• While we strongly favor the immobilization options generally over the reactor options, we do not support all the immobilization options. We strongly oppose the electrometallurgical treatment alternative ("pyroprocessing"). This opposition is supported by the conclusions of studies by the National Academy of Sciences, and even DOE's own internal memo.	10/08.03.01
Transportation Security Issues • The selection of any reactor disposition option will increase transportation risks by adding two extra transportation steps to the disposition process. Weapons-grade plutonium will have to be transported from a plutonium conversion facility to a MOX fuel fabrication plant. MOX fuel would be sent from the fuel fabrication plant to a reactor site or sites.	11/10.00.00
• Transport risks would increase even more if a decision were made to fabricate MOX fuel in Europe, pending construction of a domestic fuel fabrication plant. This scenario would require trans-Atlantic sea shipments of weapons-grade plutonium and unirradiated MOX reactor fuel.	12/10.02.00
• Any of the immobilization options would require less transportation of weapons-usable materials and thereby reduce safety and security risks, a conclusion shared by the	13/08.03.01
M-281	

01 06 00 Comment Number 4

Appropriate safeguards and security considerations will be given to the MOX facility during the development of the design, or selection of an existing facility, and during the operation of the facility. These considerations will include the capability for material accountability and appropriate protection of the various forms of the material throughout the fuel fabrication process. As noted in the nonproliferation analysis, MOX fuel fabrication poses a potential security and diversion risk, which must be addressed with enhanced security.

01 02 00 Comment Number 5

The can-in-canister concept is included as a variant under the Vitrification Alternative for surplus Pu disposition. A more detailed discussion of this process appears in Section 2.4.4 and Appendix O of the Final PEIS as a result of comments received.

01 06 00 Comment Number 6

One of the goals of materials disposition is to make the Pu as inaccessible and unattractive for weapons use as the residual Pu contained in commercial nuclear spent fuel (that is, the Spent Fuel Standard). The Pu contained in spent MOX fuel or in an immobilized glass or ceramic form meets the Spent Fuel Standard. The proliferation resistance of the final MOX spent fuel and immobilized forms are compared for the various alternatives and variations in DOE's nonproliferation study, *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Plutonium Disposition Alternatives*, which was made available for public review beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis of the Nonproliferation Policy as it relates to the disposition and storage and alternatives. The proliferation analyses, along with the PEIS, public comments, and cost, schedule, and technical analyses will be part of the decisionmaking process to support the ROD.

1995 NAS study.	13/08.03.01 cont.	- There should be an explicit requirement for an armed military escort for U.S. sea shipments of weapons-grade plutonium and mixed-oxide reactor fuel fabricated from it. The DFEIS needs to state publicly what level of security will be required for shipments of plutonium and MOX. Anything less than an armed military escort should be unacceptable. - The DFEIS does not discuss the security arrangements for sea shipments of plutonium or MOX reactor fuel. Some aspects of these arrangements can and should be made a part of the public record and subject to independent evaluation.
Transportation Safety Issues	14/13.00.00	
- No air shipments of plutonium or MOX should be allowed, given that a crashworthy air-shipment cask has not been developed for these materials. - The DFEIS understates the environmental hazards of transporting radioactive material by embarking the current international ("Type B") transport standards and assigning a low probability to an accident that could result in a breach of the cask. The DFEIS disregards recent expert reports that challenge the adequacy of the current international standards, as well as ongoing initiatives within the IAEA and the International Maritime Organization (IMO) to re-evaluate these standards in the context of historical data about accident conditions. The DFEIS's analysis is cursory and outdated, and must be revised to take into account the most recent studies and the ongoing IAEA and IMO re-evaluations of these casks. - Given the amounts of plutonium and MOX that could be transported for disposition, it would be prudent to test the shipping casks to failure and to evaluate the findings in the PEIS.	15/10.00.00	
Economic Issues	16/10.02.00	- Like the non-proliferation analysis, the cost analysis of plutonium disposition options now being prepared by Oak Ridge National Laboratory must be integrated into the NEPA decision-making process. - The cost analysis must include all costs of the various disposition options, including subsidies being demanded by nuclear electrical utilities that have expressed interest in using weapons-plutonium MOX fuel. - Cost comparisons for the different plutonium disposition options should also reflect the cost of security requirements for sea shipments.
	17/10.00.00	
	18/08.00.00	
	19/07.02.00	*****
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01 06 00

Comment Number 7

Although it may be possible to make a nuclear weapon from spent commercial reactor fuel, it can only be done with a great deal of difficulty by individuals with extensive experience in handling and processing nuclear materials. The disposition of weapons-usable Pu through the use of MOX fuel in LWRs creates a radiological barrier that makes the Pu as difficult to retrieve and reuse in weapons as Pu in spent commercial reactor fuel. The use of this technology approach would allow for the Pu to be disposed of in a geologic repository the same as commercial reactor fuel.

01 06 00

Comment Number 8

The President's Nonproliferation Policy says the United States will not recycle Pu. Burning weapons-usable Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this process will not be extracted for reuse in new fuel. This is consistent with U.S. policy since no Pu is being recycled. After a once-through fuel cycle, the Pu would be converted to a nonproliferation form as spent reactor fuel.

01 06 00

Comment Number 9

Converting surplus Pu into MOX fuel is not the end state. The end state is to use the MOX fuel in a reactor, so that after irradiation it meets the Spent Fuel Standard for proliferation resistance. While the Pu is in the MOX fuel form, it would be subject to high standards of safeguard and security.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is not being proposed by DOE and is beyond the fundamental nonproliferation purpose of the disposition effort. The PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not further propose or evaluate reprocessing of the spent fuel, and does not suggest or propose reprocessing for the management or disposition of the spent fuel.

Plutonium forms that are suitable for conversion to MOX fuel would have an energy value. However, the alternatives utilizing surplus weapons-usable Pu

I. Introduction

The Nuclear Control Institute (NCI) is a non-profit policy research group that seeks to increase understanding in the U.S. and other countries of proliferation and terrorism risks associated with civilian uses of nuclear weapons materials—plutonium and highly enriched uranium. NCI is concerned that certain plutonium-disposition options considered in the *Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement* ("DPEIS")¹ contribute to those risks.

The Department of Energy (DOE) proposes that a disposition strategy be implemented for the 34.2 metric tons of U.S. weapons-usable plutonium that has been declared surplus, as well as any additional material designated as surplus in the future. This strategy will entail rendering such weapons-usable plutonium as inaccessible and unattractive for weapons use as the plutonium contained in spent nuclear fuel from commercial power reactors, a criterion known as the "spent fuel standard." The objectives of this approach are to strengthen the inaccessibility of nuclear arms reductions and to reduce the risks of diversion or theft of the material.

NCI is concerned, however, that arms-reduction and non-proliferation objectives will be undercut if surplus plutonium is used as fuel in nuclear power reactors (the MOX option) rather than directly disposed of in waste (the vitrification option). We are also concerned with issues associated with environmental safety and health, transportation safety and security, economics, legal and regulatory matters, and fulfillment of DOE obligations under the National Environmental Policy Act (NEPA). All these concerns are elaborated in this set of comments, with the exception of environmental safety and health issues, which are addressed in a separate set of comments prepared by Dr. Edwin Lyman, scientific director of the Nuclear Control Institute.²

II. Non-Proliferation and Cost Analyses Must Be Included in DPEIS

Two key DOE analyses for use in consideration of plutonium disposition alternatives are not yet completed. DOE is still preparing a cost analysis and a non-proliferation analysis of disposition options. At the April 18 public hearing on the DPEIS, Greg Rudy, head of the Office of Fissile Material Disposition, stated that those analyses would eventually be made available to the public when completed, but not prior to the end of the comment period, then scheduled to end on May 7. At the request of NCI and several other

¹ Office of Fissile Materials Disposition, U.S. Department of Energy, *Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement*, DOE/EIS-0279-D, February 1996, Volumes I, II, III, and summary (hereafter referred to as "DPEIS").

² Dr. Edwin Lyman, "Public and Occupational Health and Safety Impacts of Plutonium Disposition Alternatives," Nuclear Control Institute, June 7, 1996.

18/08.00.00
cont.

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for fabrication of MOX fuel and burning in reactors are considered reasonable since converting the material to spent fuel meets the Spent Fuel Standard.

The Department of Energy is confident that the utilization of MOX fuel can be effectively safeguarded. Appropriate measures will be taken to provide this assurance. Further, the U.S. fuel cycle policy is unchanged. The Pu would be consumed in a reactor using a once-through fuel cycle, then disposed of as spent nuclear fuel. No reprocessing would be involved in surplus Pu disposition, consistent with the President's Nonproliferation Policy.

08 03 01 Comment Number 10

The Department of Energy acknowledges the commentor's opposition to the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

10 00 00 Comment Number 11

The human health risks of material transportations associated with the proposed Pu storage and disposition alternatives are evaluated and presented in Section 4.4 of this PEIS. The more detailed description of the methodology and supporting data for the analysis is presented in the Appendix G. Transportation of radioactive materials between sites includes health risks for both normal operations and accident conditions to the public and workers.

10 02 00 Comment Number 12

According to results calculated by the RADTRAN code, the highest number of total potential fatalities from the transportation of materials from lag storage to fuel fabrication and then to a reactor site is 4.16 for MOX fuel fabrication in the United States. For MOX fuel fabrication in Europe, the number of potential fatalities for transportation would be 4.62. Risk differences between the two MOX fuel fabrication options (that is, the United States vs. Europe) are very small for transportation of all stages involved. The

public-interest groups and stakeholders,¹ the comment period was extended until June 7, but DOE said that "while [DOE] does not intend to incorporate such [non-proliferation and cost] reports within the PEIS, they will be made available for public review this summer." Mr. Rudy asserted that these analyses are not required for inclusion in the PEIS process which focuses on environmental issues.

This is an inappropriately narrow view of the scope of programmatic environmental impact statements. Previous EIS's, such as the spent fuel take-back PEIS, have included detailed nonproliferation analysis, even making non-proliferation a primary decision criterion.² Cost analysis has been included as a decision factor in some EIS's as well.³ Indeed, even the draft plutonium disposition DPEIS explicitly cites "non-proliferation," "security," and "cost-effectiveness" as among the screening criteria used in the disposition

¹ Letter from Nuclear Control Institute, Greenpeace International, Nuclear Waste Coalition, Physicians for Social Responsibility, Institute for Science and International Security, and Nuclear Information Resource Service, to Energy Secretary Hazel O'Leary, April 29, 1996.

² Letter from Greg Rudy, Office of Fissile Materials Disposition, to Nuclear Control Institute, Nuclear Waste Citizens Coalition, Nuclear Information Resource Service, Greenpeace International, Institute for Science & International Security, and Physicians for Social Responsibility, May 6, 1996.

³ Final Environmental Impact Statement: Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel, DOE/EIS-0218F, February 1994, Summary, pp. 51-59 (non-proliferation impacts of alternatives analyzed and compared); Draft E-Campus Disposition Solutions Environmental Impact Statement, DOE/EIS-0219D, August 1994, p. 2-13 ("security and nonproliferation" decision criterion); "values to how well each alternative supports national security objectives and non-proliferation"; Draft Environmental Impact Statement: Interim Management of Nuclear Materials, DOE/EIS-0220D, March 1995, p. 2-46 (decision criterion largely identical to E-Campus draft EIS); Final Programmatic Environmental Impact Statement for Tritium Stock and Recycling, DOE/EIS-0161, Volume I, October 1993, p. 3-4 (commercial irradiation services alternative ruled out of draft PEIS based on "nonproliferation issues"); Disposition of Surplus Highly Enriched Uranium Draft Environmental Impact Statement, DOE/EIS-0246-DS, October 1993, Summary, p. 3-7 ("criteria against which to judge potential alternatives" based on President Clinton's 1993 nonproliferation policy and 1994 NAS report on plutonium disposition; "these criteria included [inter alia] nonproliferation; security ...").

⁴ Spent Fuel Take-Back EIS, 98, 55, pp. 62-63 (costs of alternatives analyzed and compared); Savannah River Site Waste Management: Draft Environmental Impact Statement, DOE/EIS-0217D, Volume I, January 1993, p. 2-78 ("A technology had to meet the following criteria to be deemed a potential technology ... (3) Its costs were comparable to other possible technologies"; Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs: Final Environmental Impact Statement, DOE/EIS-0203-F, Volume I, Summary, April 1993, p. 37 ("cost of implementation" a decision criterion, and comparative cost analysis integrated into PEIS); Draft Programmatic Environmental Impact Statement for Stockpile Stewardship and Management, DOE/EIS-0236, Volume I, February 1996, p. 3-1 ("Planning assumptions and basis for analysis" in PEIS include "optimize efficiency and minimize cost and waste consistent with programmatic needs"; Surplus HEU Disposition Draft EIS, 98, 55, p. 5-7 ("cost-effectiveness" among "criteria against which to judge potential alternatives").

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values given in Table 4.4.3.3-4 of the PEIS represent the "Total Potential Fatalities" associated with the transportation of Pu oxide, uranium oxide, and MOX fuel, for the Reactor Alternatives category. The quantities presented are a result of direct risk calculations which yield results in "numbers of human fatalities." In regard to accumulating the risks associated with a given transportation process, the maximum risk impacts from the transport of Pu oxide, uranium oxide, and MOX fuel under the Reactor Alternatives may be summed directly from Table 4.4.3.3-4. Section G.1.2.5 provides a description of the transportation effects on the global commons.

08 03 01

Comment Number 13

The Department of Energy acknowledges the commentor's support for the Verification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

13 00 00

Comment Number 14

The safeguards and security of storage of the weapons-usable fissile materials will continue to follow existing applicable regulations and requirements. Furthermore, the facilities would be inspectable by IAEA, as appropriate. Transportation impacts are discussed in Section 4.4 and Appendix G of the PEIS. Armed nuclear material couriers carefully selected and highly trained to operate tractor-trailers and communication systems would be used. These couriers would also be authorized by the AEA to carry firearms and make arrests in the performance of their duties. No military personnel are anticipated to be used in DOE's management of weapons-usable fissile materials in the United States. However, the same level of security, or higher as deemed necessary, would be provided for sea shipments as that of U.S. over-land shipments. During transport on the ship and while in temporary storage at the seaports, appropriate security escort measures would be implemented. Any sea transport would also meet applicable IAEA requirements and the International Maritime Organization code.

18/08.00.00 cont.	PEIS process to rule out certain disposition alternatives.⁷ Certainly the analyses used to support these cost and non-proliferation decisions should be incorporated into the PEIS itself. DOE's Office of Non-Proliferation and Arms Control, tasked with preparing the non-proliferation analyses, is developing a process whereby the public can comment on and participate in the development of that analysis.⁸ The process will be modeled on the approach used in preparing the National Ignition Facility (NIF) non-proliferation analysis last year. While the opportunity for public input this approach will offer is beneficial and welcome, we also believe the nonproliferation analysis is an integral element of the screening criteria and decisions made in preparing the DPEIS, and should therefore be made a formal part of the PEIS.
20/08.00.00	Moreover, we are not aware of any comparable public-input process for the economic analysis of disposition options being prepared by Oak Ridge National Laboratory. NEPA specifically requires that cost analyses, if prepared, be made a formal part of the EIS process. CEO regulations, adopted by DOE for its implementation of NEPA,⁹ provide that "[i]f a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be accompanied by reference or appended to the statement as an aid in evaluating the environmental consequences. . . ." (emphasis supplied). Courts have upheld this requirement, holding that "[t]he cost-benefit analysis of alternatives must be combined within the environmental impact statement standing alone, and not as complemented by the administrative record."¹⁰
18/08.00.00 cont.	It is NCI's position, therefore, that the Secretary of Energy should extend the public comment period until 45 days after all relevant support documents, including the cost and non-proliferation analyses, are made publicly available.
21/01.06.00	II. Non-Proliferation Issues The absence of a non-proliferation analysis from the DPEIS is particularly egregious. First, the DPEIS itself states that "[t]he purpose of the proposed action is to implement the President's Nonproliferation and Export Control Policy in a safe, reliable, cost-effective,

⁷ DPEIS, Summary, p. S-5.

⁸ Rudy letter, *ibid.*; Dave Alton, "DOE Keeps Nonproliferation, Cost Analyses Out of Pe-Disposition PEIS," *NuclearWeek*, May 20, 1996, p. 12.

⁹ 10 C.F.R. 1021.101; 10 C.F.R. 1021.102.

¹⁰ 40 C.F.R. 1502.23 (emphasis added).

¹¹ *National Wildlife Federation v. Marsh*, 564 F.Supp. 985, 997 (D.D.C. 1983).

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10 00 00	Comment Number 15	Air transport is not proposed as an option under the alternatives discussed within this PEIS. Transport of nuclear materials is limited to either land or sea. Furthermore, there is no intent or strategy for air transport to ultimately become a viable option under any of the alternatives presented in the document, even if the "Safety Series 6" regulations, referenced to on page 20 of 47 of your comments (page 564 of this CRD), are subsequently approved.
10 02 00	Comment Number 16	Type B packagings are currently certified safe by DOE and NRC for transporting radioactive materials. The comments were given consideration for the PEIS, but the analysis used is for currently certified packagings. If the safety certification for the packaging is withdrawn, then new analyses would be required through the DOT, NRC, and IAEA as appropriate.
10 00 00	Comment Number 17	The testing of shipping casks is beyond the scope of the PEIS. The risk analysis performed for the PEIS used data from currently approved DOT, NRC, and DOE-certified shipping casks to determine impacts. When a specific alternative for disposition of Pu has been selected, any additional data with respect to the risks associated with shipping casks containing Pu and/or MOX fuel would be incorporated into the analysis.
08 00 00	Comment Number 18	In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, was provided for public comment in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analyses were made available to the public in the fall of 1996. Each of these analyses, which are separate from the NEPA process, will be integrated along with the environmental analysis and public input into DOE's decisionmaking process.

technically feasible, and timely manner.¹² Second, as mentioned above, among the screening criteria used to select and exclude alternatives from the DPEIS were President Clinton's 1993 non-proliferation policy, as well as such factors as "non-proliferation" and "security."¹³

NCI is also concerned about the failure to coordinate decisions regarding disposition of military plutonium with U.S. policy toward civilian plutonium. A study by the U.S. National Academy of Sciences (NAS) on the disposition of plutonium from dismantled nuclear weapons emphasized that "further steps should be taken to reduce the proliferation risks posed by all of the world's plutonium stocks, military and civilian, separated and unseparated."¹⁴ A similar point was made in a Rand Corporation report which said: "It is critical that countries pay attention to the proliferation threat from the civilian side if they want to maximize the non-proliferation value of dismantling U.S. nuclear weapons and those of the FSRs (former Soviet republics). If countries ignore the civilian threat, they can compound the problem by making wrong choices in how to deal with military materials."¹⁵

To date, the U.S. Government has not drawn both elements of the plutonium problem, military and civilian, into a unified, coherent national plutonium policy. The strong interconnection between military and civilian aspects of U.S. HEU policy has been missing in the case of plutonium. The principal reasons for this include the reluctance of the United States to challenge Western Europe, Japan and Russia on their civilian plutonium programs, as well as resistance from nuclear industry representatives and government policymakers who insist that plutonium is a resource to be utilized, not a waste to be disposed of. These are largely political judgments that give short shrift to or ignore altogether the underlying security risks of encouraging civilian use of separated plutonium.

If current plans proceed, the world will have far more separated plutonium in civilian than in military programs¹⁶—a trend that can only work against effective disposition of military plutonium by the present nuclear-weapon states if civilian stockpiles

¹² DPEIS, Summary, p. S-3.

¹³ DPEIS, Summary, p. S-3.

¹⁴ Committee on International Security and Arms Control, National Academy of Sciences, *Management and Disposition of Excess Weapons Plutonium*, 1994 [NAS 1994], p. 34.

¹⁵ Brian Chow and Kenneth Solomon, *Limiting the Spread of Weapon-Usable Fissile Materials*, Rand Corporation Report, November 1993, p. xi.

¹⁶ David Albright, Frans Berkhout, and William Walker, *World Inventory of Plutonium and Highly Enriched Uranium 1992*, 1993, p. 200 & p. 206. Albright et al., calculate that 237 metric tons of plutonium were in military inventories at the end of 1990. By 2010, they project that up to 546 metric tons of plutonium will have been separated from civilian spent fuel, and that up to 266 metric tons will remain as surplus.

07 02 00 Comment Number 19

The costs associated with transporting the materials by sea, including related security, would be considered if the selected alternative(s) requires sea shipment. Cost data, along with technical and schedule data, was provided in a Technical Summary Report for disposition in the summer of 1996.

08 00 00 Comment Number 20

As noted by the commentor, DOE has prepared a nonproliferation analysis for the decisionmaker so that an informed decision can be made. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations and public input. The nonproliferation study is part of national policy considerations.

01 06 00 Comment Number 21

In addition to the environmental analysis of the storage and disposition alternatives identified in this PEIS, DOE conducted technical, schedule, cost and nonproliferation analyses to assure an adequate basis for a ROD. These analyses were published as separate documents and were made available to the public for review and comment.

The United States has placed some of its weapons-usable materials under IAEA safeguards and is continuing efforts to make more available to IAEA. DOE is also assisting Russia with efforts to build new storage facilities and to establish new control and accountability capabilities for existing storage facilities. Through these efforts, there is hope to encourage greater international commitment to IAEA inspections and, thereby, further ensure meeting nonproliferation goals.

01 04 00 Comment Number 22

European, Japanese, and Russian civilian nuclear policies are beyond the scope of this PEIS and DOE's Proposed Action; coordination of U.S. policy and related nonproliferation impacts concerning U.S. origin civilian and

22/01.04.00
cont.

of plutonium eclipses military stockpiles as projected. It is therefore imperative that U.S. warhead-plutonium disposal policy and non-proliferation objectives be closely coordinated.

The NAS study proposed three proliferation risk factors for use in comparing plutonium-disposition options: risk of theft; risk of reversal; and impact on arms reduction.¹⁷ Judged by each of these criteria, the option of irradiating weapons plutonium in nuclear reactors (the MOX option) poses far greater proliferation risks than the option of vitrifying plutonium with highly radioactive waste (the VHLOW option).

23/08.03.01

The MOX Option Poses a Greater Risk of Diversion and Theft

The MOX option presents a greater risk of diversion primarily because of the fuel-fabrication stage, a process that is difficult to safeguard effectively in view of plutonium's characteristic of sticking to the surfaces of processing equipment, and of the large, unavoidable uncertainties in the measurements of this "hold-up" material. Fuel fabrication is susceptible to systematic diversion schemes by state operators of the plants, or by individual plant workers in collaboration with outside states or groups. This stage is avoided with the VHLOW option, making it a proliferation risk unique to the MOX option. This issue is not considered in the DPEIS' analysis of MOX fuel fabrication.¹⁸

Recent experience suggests that the proliferation risk at this stage of disposition could be substantial. Difficulties at the Plutonium Fuel Processing Facility (PFPP) in Japan suggest that purportedly state-of-the-art MOX fabrication plants are difficult if not impossible to safeguard effectively. In May 1994, the Nuclear Control Institute disclosed that a major plutonium inventory discrepancy was being built up at the PFPP since the plant began operating in 1984.¹⁹ The Japanese government and International Atomic Energy Agency (IAEA) claim that this plutonium, amounting to about 70 kilograms, or more than eight significant quantities (SQs), is not missing because it has been measured as being held up—that is, stuck to surfaces in the remote-handling equipment. Such measurements are taken by means of neutron coincidence counting and are subject to a wide range of uncertainty, perhaps as much as 30 percent in some instances.²⁰ To end the uncertainty, the IAEA recently requested that Japan cut open the glove boxes to remove and physically produce the held-up plutonium for the purpose of establishing the plant's inventory. This request was strongly resisted by the Japanese and will not be met promptly.

¹⁷ NAS 1994, pp. 23-27.

¹⁸ DPEIS, Section 4.3.5.1.

¹⁹ "Assounding" Discrepancy of 70 Kilograms of Plutonium Warns Shutdown of Troubled Nuclear Fuel Plant in Japan, Nuclear Control Institute, May 9, 1994.

²⁰ Paul Leventhal, "IAEA Safeguards Showrooming—A Critique," Nuclear Control Institute, September 12, 1994. For further discussion of the limitations of IAEA safeguards on plutonium, see Mervin Miller, "Are IAEA Safeguards on Plutonium Bulk-Handling Facilities Effective?," Nuclear Control Institute, August 1990.

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surplus "military" (weapons-usable) Pu is considered in the nonproliferation analysis that will be part of the decisionmaking process. As an example of this consistency and coordination, DOE is not proposing reprocessing of spent fuel generated by the use of MOX fuel consistent with U.S. policy against reprocessing of commercially generated spent fuel.

08 03 01 **Comment Number 23**

The Department of Energy acknowledges the commentator's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations (including nonproliferation analyses), and public input. The nonproliferation analysis, *Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Materials Storage and Plutonium Disposition Alternatives*, examines the potential diversion risk using the MOX fuel fabrication, safeguards, "hold-up" material, and accountability to the IAEA and international community, among other things. This nonproliferation analysis has been made available for public comment and will be considered in the decisionmaking process.

05 01 08 Comment Number 24

The Glass Material Oxidation/Dissolution System Alternative was eliminated from further consideration upon determining that the research and development required precluded it from being used for disposition within a decade from the ROD. Should this alternative become technologically viable, it may be considered by DOE in subsequent tiered NEPA documents. Other technologically viable vitrification alternatives and vitrification variants are considered and analyzed in this PEIS.

as the IAEA had originally asked.²¹

It will reportedly cost more than \$100 million to clean out all the held-up plutonium and rebuild the PFPP, and even then PNC offers no guarantee that all the plutonium can ever be recovered or accounted for. As of October 1995, the clean-out was not scheduled to be completed until the end of the year,²² and it is not clear that the work has been completed even now. MOX fabrication plants in Europe, which might be used to produce warhead-plutonium MOX fuel,²³ have not made sufficient disclosure of the design and operating history of their material control and accounting systems to permit any conclusion about the effectiveness of safeguards at these facilities. Because safeguards at these facilities are fully implemented by EURATOM, neither the United States nor the IAEA is in a position to verify independently material balances.

This controversy over the plutonium hold-up problem at MOX fuel fabrication plants holds valuable lessons for the warhead-plutonium disposition process. MOX disposal schemes have unacceptable uncertainties and risks built into them that will make it impossible to determine whether all warhead plutonium has been accounted for.

Such uncertainty could severely limit the trust nations could place in an international nuclear arms-reductions and non-proliferation regime predicated upon recycling warhead plutonium as fuel for reactors. Thus, the existing uncertainty over effectiveness of safeguards at MOX fabrication plants underscores a primary goal of the disposition process, "... to provide viable evidence of irreversible disarmament."²⁴

There are also risks of theft with the MOX option that arise during transportation and storage of plutonium and MOX fuel, which are discussed below (see "Transportation Issues").

In a vitrification disposition scheme, separated plutonium is vulnerable to diversion only prior to its placement in the melter. After that, it is mixed with molten glass and, in most proposals, either mixed with or emplaced in highly radioactive fission products, making it inaccessible for all practical purposes. Safeguards efforts for vitrification must concentrate on preparation of plutonium for the melter (e.g., conversion from metallic to oxide form). At least one vitrification technology, the GMODS system under development

23/08.03.01
cont.

24/05.01.08

²¹ Mark Hibbs, "IAEA Gives Japan Till 1995 to Account for Holdup Inventory at PFPP Plant," *NuclearFuel*, October 10, 1994, pp. 12-13.

²² Mark Hibbs, "Rebuild at PNC's PFPP Plant Will Cost Japan \$100-million," *NuclearFuel*, October 9, 1995, pp. 11-12; "The Hold-Up at PFPP Still Controversial," *Nuke Int'l*, Tokyo, November/December 1995, p. 3.

²³ DFEIS, Section 2.4.5.1, p. 2-119.

²⁴ DFEIS, Summary, p. 5-4.

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05 00 06

Comment Number 25

Comment noted.

24/05.01.08
cont.

at Oak Ridge National Laboratory, is intended to allow plutonium to be added in unaltered metallic form, avoiding this stage entirely and eliminating this diversion vulnerability.²⁵

One promising vitrification option that should be assessed in detail in the DPEIS, but is not,²⁶ is now being developed. In January, scientists at the Savannah River Site in South Carolina successfully demonstrated the "can-in-a-canister" approach, which mixes weapons plutonium and molten glass in small metal cans. After cooling, these cans are to be placed in larger steel canisters, which would then be filled with a mixture of molten glass and highly radioactive waste, thus immobilizing the plutonium and meeting the NAS' spent fuel standard for final disposal. The operation would take place at the Defense Waste Processing Facility at Savannah River which recently began filling these larger canisters to dispose of thousands of gallons of high-level waste remaining from plutonium production during the Cold War.

5/01.02.00
cont.

Both Westinghouse, the contractor operating the Savannah River Site, and the DOE Office of Fissile Material Disposition are very encouraged by the promising results thus far. According to Nicholas Kuehn, coordinator of the can-in-a-canister project at Savannah River, a "cold test" in January to demonstrate vitrification in cans with non-radioactive material, "exceeded our best expectation." As a result, Kuehn stated, can-in-a-canister is "certainly at the top of the list for immobilization options." A "hot test," in which actual plutonium will be vitrified in a can, will take place at Lawrence Livermore Laboratory later this year.²⁷

25/05.00.06

The safeguards advantages of immobilization are noted in the NAS study. It concluded that fabrication of HLW waste logs would

... be easier to safeguard than fabrication of MOX fuel bundles. Monitors would have to confirm only the single step of mixing the plutonium with the HLW. Once that step had taken place, the plutonium would be in an intensely radioactive mix and very difficult to divert. There would be no capability within the vitrification facility for re-separating the plutonium from the HLW.

²⁵ C.W. Fensberg et al., Oak Ridge National Laboratory, "Direct Conversion of Spent Fuel to High-Level-Waste (HLW) Glass," Paper Presented to American Nuclear Society Conference, Salt Lake City, Utah, September 28, 1994.

²⁶ The DPEIS does not assess the "can-in-a-canister" approach in detail because it only analyzes the environmental consequences of a new, or "greenfield," vitrification plant. DPEIS, Section 4.3.4.1. Such an approach is inappropriate, because it skips the decision process toward MOX options by overestimating the environmental impacts of vitrification options that would use existing facilities (such as "can-in-a-canister" at DWPF) relative to MOX options. This point is elaborated in the environmental safety and health section of these comments.

²⁷ George Labenz, "Can In a Canister? DOE Considers Novel Plutonium Disposition Process," *Energy Daily*, May 31, 1996, p. 1.

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06 01 08 Comment Number 26

Proliferation resistance is the primary objective of the Fissile Materials Disposition Program. To ensure each disposition alternative provides sufficient proliferation resistance, an independent team of safeguards and security experts is assessing the proliferation vulnerability of the various disposition alternatives. The purpose of this assessment is to identify potential weaknesses in the proliferation resistance and, thus, the effectiveness of the disposition alternatives to threats of material theft and/or retrieval and reuse.

MOX fabrication, by contrast, requires many steps involving large-scale bulk handling of plutonium, with inherent accounting uncertainties, and at each step of the process the plutonium remains in a form from which it could be readily reprocessed.²⁴

The MOX Option Poses a Greater Risk of Reversal

The proliferation resistance of the final waste forms largely determines the potential reversibility of plutonium disposition. Appendix H of the DPEIS, "High-Level Waste Forms Comparative Analysis," fails to examine these issues. A detailed comparative analysis of plutonium retrievability from spent MOX fuel and immobilized glass and ceramic waste forms must be included along with the factors already addressed, such as regulatory issues, criticality, thermal load, radiation, and release.

Reversibility is a function of three factors. The first is the amount of residual plutonium remaining in the final waste forms. The MOX option would leave modestly less plutonium in final waste than the VHLW option. However, it is misleading to speak of MOX "burning" of weapons plutonium as if all or even most of the plutonium is consumed during irradiation. In fact irradiated weapons-plutonium MOX fuel would contain only about 30 percent less total plutonium than fresh MOX.²⁵

The second factor is retrievability of the residual plutonium. Separation of plutonium from fresh MOX fuel is a straightforward chemical process. Reprocessing irradiated MOX fuel by means of PUREX employs proven technology that could recover substantial amounts of plutonium. Chemical separation of plutonium from VHLW is a similar chemical processes, roughly comparable in difficulty.²⁶

The third factor is the isotopic composition of the residual plutonium in the final waste forms. Plutonium disposed of in VHLW remains weapons-grade, except for normal radioactive decay. Weapons plutonium in irradiated MOX fuel contains a considerably smaller proportion of fissile isotopes after irradiation than before. This factor, however, is not nearly as important from a non-proliferation perspective as some have argued. Many MOX proponents emphasize the degree to which the isotopes of the weapons plutonium would be altered by irradiation in a particular reactor technology—that is, the degree to

²⁴ NAS 1994, p. 192.

²⁵ Panel on Reactor-Related Options for the Disposition of Excess Weapons Plutonium, Committee on International Security and Arms Control, National Academy of Sciences, *Minimizing and Disposition of Excess Weapons Plutonium: Reactor-Related Options* 1995 [NAS 1995], Table 6-5, p. 270, indicates that a fresh weapons-plutonium MOX fuel element would contain 25 kilograms of plutonium. The same element, after irradiation to a burn-up of 40 megawatt-days per kilogram heavy metal, would contain 18 kilograms of plutonium.

²⁶ NAS 1995, p. 243.

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which the Pu-239 proportion can be reduced—as if this factor should be decisive in choosing among disposition technologies.

This is an inappropriate criterion by which to assess proliferation risks because it perpetuates a dangerous myth that reactor-grade plutonium cannot be used to make workable weapons. The ability to construct a weapon from reactor-grade plutonium was demonstrated decades ago. It is dangerous even to consider it an open question. Hans Blix, director-general of the IAEA, informed our Institute that there is “no debate” on this point in the Safeguards Department of the IAEA, and that the agency considers virtually all isotopes of plutonium, including high burn-up reactor-grade plutonium, to be usable in nuclear weapons.¹¹ In June 1994, U.S. Energy Secretary Hazel O’Leary declassified further details of a 1962 test of a nuclear device using reactor-grade plutonium, which successfully produced a nuclear yield.¹²

In a future breakout scenario, the United States (or Russia) could presumably draw on its nuclear test data and predictive capabilities to reconfigure weapons designs and reconstitute a large arsenal, even from plutonium isotopically degraded to reactor-grade by irradiation in MOX. Also, development of laser isotope separation, such as AVLIS, is likely eventually to permit the “mining” of the Pu-239 isotope from reactor-grade plutonium. If isotopic degradation were determined to have some utility from a non-proliferation perspective (for example, to establish parity with non-nuclear-weapon states storing high burn-up plutonium in the form of spent fuel), weapons plutonium could be mixed with reactor-grade plutonium, possibly from surplus stockpiles of separated civil plutonium in Great Britain or Russia, to dilute it isotopically prior to vitrification with HLW.

Our main point is, however, that isotopic degradation does not pose a substantial barrier to re-militarization of warhead plutonium, and therefore does not constitute a compelling argument in favor of the MOX option. It is important to note that the 1995 NAS study agreed with this conclusion. In its comparison of the MOX and VH/LW options it found that “[t]he plutonium in the spent fuel assembly would be of lower isotopic quality for weapons purposes than the still weapons-grade plutonium in the glass log, but since nuclear weapons could be made even with the spent fuel plutonium this difference is not

¹¹ Letter from Hans Blix, Director-General of the IAEA, to Paul Leventhal, NCI, November 1, 1990; “Blix Says IAEA Does Not Dispute Utility of Reactor-Grade Pu for Weapons,” *Nuclear Eng. News*, November 12, 1990, p. 8. However, Blix made this statement only after the Nuclear Control Institute challenged assertions by IAEA officials earlier that year that reactor-grade plutonium was unsuitable for use in weapons.

¹² U.S. Department of Energy, Office of the Press Secretary, “Additional Information Concerning Nuclear Weapon Test of Reactor-Grade Plutonium,” DOE Fact Sheet released as part of the Openness Initiative, June 27, 1994. The fact that the test occurred and produced a nuclear yield was declassified in 1977. Robert Gillett, “Impure Plutonium Used in ‘62 A-Test,” *Los Angeles Times*, September 16, 1977, part 1, p. 3.

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Comment noted.

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Comment Number 28

The proliferation resistance of each alternative is the subject of a separate study conducted by DOE’s Office of Non-Proliferation and National Security. The results of this study will, along with the PEIS and other information, be presented to the decisionmaker so that good sustainable decisions can be made.

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decisive.³³ [emphasis supplied] This point should be explicitly made explicitly in the final PEIS and record of decision.

The MOX Option Poses a Threat to Arms Control and Non-Proliferation Efforts

In its non-proliferation policy statement, the Clinton administration declared that "the United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes."³⁴ Though it does not necessarily involve further reprocessing, the MOX option would clearly encourage the civil use of plutonium, which in a number of countries includes plans for reprocessing irradiated MOX fuel. The U.S. Government (or its duly authorized agents) would be engaging in MOX activities for the first time on a commercial scale, legitimizing the use of MOX in civil nuclear power programs.

Such a sea change in U.S. policy would confuse and complicate U.S. non-proliferation diplomacy. It would send the wrong signal to Western Europe, Japan, and other non-nuclear-weapon state members of the Non-Proliferation Treaty (NPT). The NAS study conceptualized this issue as the "Fuel Cycle Policy Signal":

[P]olicymakers will have to take into account the fact that choosing to use weapons plutonium in reactors would be perceived by some as representing generalized U.S. approval of separated plutonium fuel cycles, thereby compromising the ability of the U.S. government to oppose such fuel cycles elsewhere. Conversely, choosing to dispose of weapons plutonium without extracting any energy from it could be interpreted as reflecting a generalized U.S. government opposition to plutonium recycle. Either choice could have an impact on fuel cycle debates now underway in Japan, Europe, and Russia.³⁵

The DPEIS implicitly acknowledges the importance of the fuel cycle policy signal when it posits that one of the goals of the disposition process is "to strengthen national and international arms control efforts by providing a storage and disposition model for the international community."³⁶ But the DPEIS does not cite the NAS finding or explicitly consider the fuel cycle policy signal that the MOX option would send relative to alternative immobilization options.

³³ NAS 1993, p. 413.

³⁴ White House Fact Sheet, "Nonproliferation and Export Control Policy," September 27, 1993, p. 2.

³⁵ NAS 1994, p. 149.

³⁶ DPEIS, Summary, p. S-1.

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Converting surplus MOX fuel is not the end state. The end state is to use the MOX fuel in a reactor, so that after irradiation, it meets the Spent Fuel Standard for proliferation resistance. While the Pu is in the MOX fuel form, it would be subject to high standards of safeguards and security.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is not being proposed by DOE and is contrary to the fundamental nonproliferation purpose of the disposition effort. The PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not further propose or evaluate reprocessing of the spent fuel and does not suggest reprocessing for the management or disposition of the spent fuel.

01 06 00 Comment Number 30

The U.S. fuel cycle policy is unchanged. The Pu would be consumed in a reactor using a once-through fuel cycle, then disposed of as spent nuclear fuel. No reprocessing would be involved in surplus Pu disposition, consistent with the President's Nonproliferation Policy. The Nonproliferation Policy impact analysis for the alternatives described in the PEIS is presented in a separate document made available for public review in the October 1996.

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The MOX option sends the wrong fuel cycle policy signal in three ways. First, the MOX option effectively declares that plutonium has an asset value, and that the energy contained within it should be viewed as a "national asset" (as the U.S. DOE puts it)¹⁷ or even "national heritage" (as the Russians put it).¹⁸

Second, the MOX option suggests that a plutonium fuel cycle can be effectively safeguarded, and the use of MOX for weapons plutonium disposition would surely be cited by plutonium advocates as a government "seal of approval" on the process.

Third, the MOX option would be portrayed as giving credibility to the claim that plutonium recycle in light-water reactors (LWRs) is essential to nuclear waste management. Despite the fact that both unburned spent fuel and high-level waste derived from reprocessing produce comparable amounts of penetrating radiation and short-term thermal output,¹⁹ reprocessing advocates have seized upon the separation and re-use of plutonium as the *SINCE 1988* goal of effective waste management.

Reprocessing proponents would seize upon the use of MOX in the disposition process as a U.S. government policy statement that plutonium can be effectively disposed of by means of fissioning it in MOX-fueled reactors. The MOX fuel used to irradiate weapons plutonium could be reprocessed, and the plutonium industry, particularly in Japan and Germany, would continue to press for this option as a means to "eliminate" completely plutonium over hundreds of years. If total plutonium elimination becomes the goal of a plutonium-recycling program, fast reactors—with all their poor economics, safety hazards, and proliferation risks—would become inevitable, because for technical reasons plutonium cannot be recycled more than two or three times in thermal reactors.²⁰ Even then the goal of total elimination would be futile, because most fast reactors are breeders that produce more plutonium than they consume. The U.S. warhead-plutonium disposition program should not in any way lend credence to such misguided efforts.

Thus, a general category of danger from the MOX option would be the perpetuation of overseas plutonium and breeder reactor programs. Russia's current position is to keep weapons plutonium in long-term storage pending its eventual use as fuel for LWRs and fast

¹⁷ "Report Calls Plutonium a 'National Asset,'" *DANVER POST*, July 29, 1993.

¹⁸ Frank von Hippel, Federation of American Scientists' Fund, *Cooperative Research Project on Arms Reduction: Sixth Annual Report*, August 22, 1993, p. 3.

¹⁹ U.S. Office of Technology Assessment, *Managing the Nation's Commercial High-Level Radioactive Wastes*, March 1985, pp. 64-71.

²⁰ Report by the Working Party on Physics of Plutonium Recycling, NEA Nuclear Science Committee, *Physics of Plutonium Recycling: Volume I: Issues and Perspectives*, OECD Nuclear Energy Agency, 1995, pp. 115-116.

01 06 00 Comment Number 31

The U.S. fuel cycle policy is unchanged. The Pu would be consumed in a reactor using a once-through fuel cycle, then disposed of as spent nuclear fuel. No reprocessing would be involved in surplus Pu disposition, consistent with the President's Nonproliferation Policy. The Nonproliferation Policy impact analysis for the alternatives described in the PEIS is presented in a separate document made available for public review in the fall of 1996. DOE feels that this will not provide any signal or support for foreign reprocessing.

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PAUL LEVENTHAL
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breeder reactors." The U.S. would have little credible basis upon which to oppose Russia's plutonium fuel cycle plans if the U.S. were to select the MOX option and would also provide tacit support to European and Japanese plutonium programs.	31/01.06.00 cont.	01 04 00 Comment Number 32	Comment noted.
A further danger is that the MOX option would undercut U.S. non-proliferation diplomacy directed at so-called "rogue states." With the U.S. actively pursuing the MOX option, it becomes far more difficult to deny nations of proliferation concern their "right" to civil use of plutonium as members of the NPT. North Korea claimed, albeit with little credibility, that its reprocessing plant at Yongbyon was intended to separate plutonium for use in MOX fuel for civilian nuclear power reactors. Through it agreed in October 1994 to abandon plans for indigenous reprocessing facilities, the ultimate disposition of plutonium contained in the remaining MAGNOX spent fuel and in future LWR spent fuel has yet to be determined. Overseas reprocessing has not been ruled out; nor has recycling of plutonium as MOX fuel in North Korea been specifically precluded.	32/01.04.00	08 03 01 Comment Number 33	The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.
At the third NPT PrepCom meeting, Iran threatened to withdraw from the NPT because, it charged, Iran and other NPT non-nuclear-weapon states were being denied nuclear technology that was their due under the terms of Article IV. India and Pakistan, though not NPT members, pursue plutonium programs that they justify as a legitimate part of their civil nuclear programs, and China anticipates reprocessing the spent fuel from its nuclear-power plants.	33/08.03.01	01 04 00 Comment Number 34	The Department of Energy acknowledges the commentor's opposition to the Electrometallurgical Treatment Alternative. Information and assessments on electrometallurgical treatment will be taken into account in the decisionmaking process. Separate technical, schedule, and costs analyses on the disposition options, including electrometallurgical treatment, were issued by DOE beginning in late July 1996; the nonproliferation analysis of the disposition options, including electrometallurgical treatment, was issued for public comment in October 1996. The Electrometallurgical Treatment Alternative is analyzed in the PEIS because it is a "reasonable" alternative, and as such, must be analyzed under NEPA. Section 2.4.4.3 of the PEIS has been revised to note the NAS concerns regarding the use of electrometallurgical treatment for Pu disposition.
The only credible way to oppose the separation and use of plutonium as well as acquisition and use of HEU in nations of proliferation concern is to oppose it comprehensively—that is, to oppose such use in any nation for any purpose. This approach is effectively precluded if the U.S. insists upon retaining the right to use MOX fuel in civilian reactors, even if only for the purpose of weapons plutonium disposition.	34/01.04.00	While we strongly favor the immobilization options generally over the reactor	
Pyroprocessing Immobilization Alternative Must Be Rejected⁴² The DPEIS (Section 2.4.3.3) posits "electrometallurgical treatment" as one of the immobilization options. In this option, pyroprocessing technology developed by Argonne National Laboratory as part of the Integral Fast Reactor (IFR) Program, now cancelled, would be used to produce a molten waste form. Cesium-137 or high-level waste would be incorporated into the waste form to create a radiation barrier.⁴³			
⁴² Mark Hibbs, "G-7 Concessions Mark Triumph for Minatom's Strategic Aims," <i>Nucleonics Week</i>, April 25, 1996, p. 9.			
⁴³ This section was prepared by Daniel Horner, deputy director of the Nuclear Control Institute.			
⁴⁴ DPEIS, p. 2-114.			

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options, we do not support all the immobilization options. We strongly oppose the electrometallurgical treatment alternative ("pyroprocessing"). A recent NAS study noted the proliferation risks of proceeding with pyroprocessing:

Developing technology that effectively extracts the plutonium from mixtures could facilitate decommissioning of former weapons manufacturing facilities and mitigate some of the problems found at these facilities, such as corroding fuel. However, such efficient technology also raises concerns about proliferation; what the United States might use to assist in the cleanup of a contaminated facility such as Rocky Flats could be used by another country to obtain plutonium for a weapons program.⁴³

We cannot understand why this option was even included among the alternatives. The 1995 NAS study summarized its views on pyroprocessing as follows:

The pyroprocessing approach, which would use technology developed as part of the U.S. Integral Fast Reactor program, would require substantial additional engineering development and construction of major new facilities (including what would amount to a sizable LWR fuel reprocessing plant to provide feed material), and it would provide a waste form that has not been characterized at all for long-term disposition and would probably be unsuitable for emplacement in Yucca Mountain. All this strikes our panel as a prescription for long delays and big investments in pursuit of highly uncertain prospects for solving a problem for which satisfactory approaches -- the current-reactor/spent fuel and borosilicate-glass/vitrification options -- are much closer at hand.⁴⁴

These problems were not even addressed, let alone rebutted, in the DPEIS.

This summary analysis alone indicates that pyroprocessing should have been ruled out on the grounds of timeliness, technical maturity, ES&H, policy (because, like options R10, R11, and R13, it involves reprocessing), and cost-effectiveness. Indeed, one wonders what the purpose of the screening criteria is if an option can fail to meet so many of them and still be included among the options considered in the DPEIS.

Among the other critiques of pyroprocessing was an internal DOE memo, which analyzes and rejects each of the rationales for continuation of the pyroprocessing program, concluding that "[t]he promise of simplicity and being inexpensive just does not seem to be

⁴³ Gregory R. Choppin, et al., *An Evaluation of the Electrometallurgical Approach for Treatment of Excess Weapons Plutonium*, National Research Council, 1996 [Choppin], p. 27.

⁴⁴ NAS 1995, p. 412. A more detailed analysis appears on pp. 219-221.

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born [sic] out in practice.⁴⁶ As indicated in this memorandum, the recent report by the National Academy of Sciences did highlight the serious potential problems from plutonium loading in the pyroprocessing waste form:

Criticality concern related to the long-term post-closure repository performance of the GBZ [glass-bonded zirconite] waste form cannot be addressed readily, because the exact composition of the waste forms is still undetermined. The resulting technical concerns are exacerbated by the expected concentration of plutonium at the front of the loading columns during processing.⁴⁷

The report also raised important questions about the waste forms with regard to radioactive decay effects, chemical stability, thermal stability, and long-term waste-form performance.⁴⁸

With regard to the assessment of pyroprocessing in the 1994 and 1995 NAS plutonium-disposition studies, the report said:

Given the great concern about the fate of weapons plutonium, the CISAC reports recommended against approaches that would require significantly more time to develop, or would entail significantly greater uncertainty, than alternatives that could be available in a shorter time with less uncertainty. That conclusion was based on an earlier version of the electrometallurgical approach. Although this committee has not examined costs, the committee believes that the uncertainty and timeliness for the present proposed electrometallurgical technique would not alter the conclusion of the earlier report.⁴⁹

DOE clearly was aware of this recent study as it prepared the DPEIS, as the study is cited on page 2-114 of Volume I. But the footnote is rather remarkable. It says, "The National Academy of Sciences recently completed an evaluation and draft report on this subject. The results of this evaluation will be considered in the preparation of the Final Storage and Disposition PEIS." The study was completed and DOE was aware of it, but obviously chose not to incorporate into the analyses it conducted in preparing the DPEIS. It is difficult to avoid the conclusion that DOE ignored this study (as well as the other

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⁴⁶ "Comments on the Electrometallurgical Process," attachment to letter to Bill Dukler, MD-1, from Leonard Gray, Task Leader, Fuel Materials Immobilization Task, Fuel Materials Disposition Project, 30 August 1995.

⁴⁷ Choppin, p. 24.

⁴⁸ Choppin, pp. 6 and 22-26.

⁴⁹ Choppin, pp. 27-28.

critiques cited above) so that it could include pyroprocessing as one the disposition options, notwithstanding the overwhelmingly negative assessments of it by independent experts. IV. Transportation Issues³⁰ <u>Transport Security Issues</u> This section addresses security and safety concerns related to the transport of plutonium and mixed-oxide fuels, as described in the DPEIS's evaluation of plutonium disposition options. First, it must be noted that the selection of any reactor disposition option will increase transportation risks by adding two extra steps to the disposition process. Weapons-grade plutonium will have to be transported from a plutonium conversion facility to a MOX fuel fabrication plant. Mixed-oxide (MOX) reactor fuel would be sent from the fuel fabrication plant to a reactor site or sites. The DPEIS recognizes the security risks involved and states an SST will be used "to minimize potential for diversion."³¹ The NAS study pointed out the single-site location of weapon-plutonium vitrification as a factor that would reduce the risk of theft relative to MOX options.³² Transport risks would increase even more if a decision were made to fabricate MOX fuel in Europe, pending construction of a domestic fuel fabrication plant. This scenario would require trans-Atlantic sea shipments of weapons-grade plutonium and unirradiated MOX reactor fuel. Although the DPEIS assumes construction of a U.S. MOX plant within six years, regulatory obstacles and public resistance could delay construction beyond the time a MOX plant would be needed. In that case, more frequent shipments to and from Europe would be necessary. Furthermore, if MOX were to be used to fuel a CANDU reactor, and were to come to a U.S. military or other port of entry, an additional transportation step would be required to send fresh MOX fuel to Canada. This last variation is not addressed in the DPEIS. Transportation risks could be minimized, however, by opting for direct disposal of surplus plutonium as waste. Any of the immobilization options would require less transportation of weapons-usable materials and thereby reduce safety and security risks. If conversion and vitrification were done at the Pantex site, it would eliminate the need to transport plutonium from the storage facility to an immobilization plant. At issue are shipments of large quantities of weapons-usable materials. If fuel	34/01.04.00 cont.
transportation analysis includes the movement of material required for disposition at more than one location. If the common activity facilities (for example, pit disassembly facility) are located at the same site as the disposition activity facilities (for example, ceramic immobilization facility) there would be a reduction in the transportation risk. The current analysis is bounding for activities at multiple sites.	35/10.00.00
At issue are shipments of large quantities of weapons-usable materials. If fuel	36/10.00.00
This section was prepared by Sharon Tamm, vice president of the Nuclear Control Institute. ³⁰ DPEIS, p. 2-172. ³¹ NAS 1993, p. 243.	35/10.00.00 cont.

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10 00 00 Comment Number 35

The PEIS analysis assumes that transport of Pu by ship would be done by dedicated British Nuclear Fuel, Limited, or COGEMA ships from military seaports in the United States to seaports in Great Britain or France. The transport would meet applicable IAEA requirements and the IMO code. While in temporary storage at the seaports and during transport on the ship, appropriate escort security measures would be implemented.

Section G.1.2.5 provides a description of the transportation effects on the global commons and includes the results of an environmental assessment of the sea shipment of Pu, *Environmental Assessment of the Import of Russian Plutonium-238*, referenced in the PEIS as DOE 1993x. Technical and licensing issues related to the MOX fuel fabrication have been considered by DOE in the technical evaluations of the storage and disposition alternatives, which were issued in late July 1996. It is anticipated that MOX fuel fabricated in Europe would not be used in a reactor in Canada.

10 00 00 Comment Number 36

The PEIS transportation analysis includes the movement of material required for disposition at more than one location. If the common activity facilities (for example, pit disassembly facility) are located at the same site as the disposition activity facilities (for example, ceramic immobilization facility) there would be a reduction in the transportation risk. The current analysis is bounding for activities at multiple sites.

10 00 00 Comment Number 37

Transportation from the MOX fuel fabrication site to a reactor site would be in accordance with DOE's SST system, to ensure the safe transport of this material. If the CANDU Reactor Alternative were selected at the ROD, transportation requirements would be coordinated with Canadian authorities for the safe secure transport of the MOX fuel. Sections 4.4.2 and G.1.1 of the Final PEIS have been clarified to correct the confusion for the utilization of SST, for fresh MOX fuel shipment.

The PEIS analysis assumes that transport of Pu by ship would be done by dedicated British Nuclear Fuel, Limited, or COGEMA ships from military seaports in the United States to seaports in Great Britain or France. The transport would meet applicable IAEA requirements and the IMO code. While in temporary storage at the seaports during transport on the ship, appropriate escort security measures would be implemented.

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cont.

fabrication were done in the United States, the DPEIS estimates the fabrication plant would receive 20 shipments of plutonium annually and send 174 shipments of reactor fuel bundles to a reactor site or sites.³³ If a European fuel-fabrication facility were used, there would be two sea shipments to Europe each year of two to four tons of weapons-grade plutonium and four sea shipments annually to the United States of fresh MOX fuel.³⁴

Use of an existing European fuel-fabrication facility is described as an interim, short-term option because construction of a U.S. plant is projected to take six years.³⁵ But during this time, there could be a dozen sea shipments of plutonium to Europe and twice that number of shipments of MOX fuel to the United States. The U.S. has advised Japan repeatedly that Japan must provide an armed escort for Japanese shipments of reactor-grade plutonium in oxide or mixed-oxide form from France to Japan.³⁶ There needs to be an explicit requirement for a comparable armed escort for U.S. sea shipments of weapons-grade plutonium and mixed-oxide reactor fuel fabricated from it.

The transport of many "significant quantities" of weapons-materials raises security concerns that are directly relevant to selection of a disposition option. With respect to plutonium, the DPEIS commits to the use of Safe Secure Transport vehicles (SST) in the United States. However, the DPEIS is not clear on the arrangements for domestic transport of unirradiated MOX fuel.

37/10.00.00

On this point, the text is inconsistent and contradictory. Table 4.4.2.2-1 indicates MOX fuel will be transported by "truck," with no mention of an SST. Elsewhere, use of an SST, an SST "container," or a certified commercial truck carrier is described.³⁷ The report notes that "standard commercial practice" will be followed,³⁸ even though there is no commercial MOX industry in the U.S. And there is no discussion of security arrangements with the government of Canada—which presumably has no SSTs—if CANDU reactors were used. These matters require clarification.

³³ DPEIS, p. 4-782.

³⁴ DPEIS, p. G1.

³⁵ DPEIS, p. 2-121.

³⁶ Letter from Fred McLaughlin, Director, Office of Nuclear Non-Proliferation and Export Policy, U.S. Department of State, October 23, 1993, to Tom Clements, Greenpeace International Plutonium Campaign.

³⁷ DPEIS, pp. 4-771-4772. "Pu and HEU would be transported in traditional shipments by safe secure trailer (SST). The other materials would be transported by commercial truck . . ." DPEIS, Appendix G, Interstate Transportation, p. G-1. "For the shipment of Pu oxide from big storage to an overseas MOX fuel fabrication site and the return shipment of reactor fuel assemblies, (1) material must be transported by safe secure trailer (SST) to or from the selected U.S. port . . ." DPEIS, Appendix G, p. G-3.

³⁸ DPEIS, p. 4-782.

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The DPEIS does not discuss the security arrangements for sea shipments of plutonium or MOX reactor fuel. These arrangements are likely included in the classified appendix on transportation.³⁹ However, some aspects of these arrangements should be made a part of the public record and subject to independent evaluation. There is ample precedent for public debate on these issues. The physical protection arrangements for sea shipment of plutonium have been discussed publicly at least since the 1984 sea shipment of 184 kilograms of plutonium from France to Japan. The need for a military escort was debated in the American and Japanese press prior to the <i>Albatross</i>-<i>maru</i> shipment in 1993. The Department of State has stated on more than one occasion that the U.S. would require an armed escort vessel for any future sea shipment of mixed-oxide fuel.⁴⁰	37/10.00.00 cont.
The DPEIS needs to state publicly what level of security will be required for shipments of plutonium and MOX. This can be done without providing explicit details regarding armament, routing and scheduling that might prove useful to a potential adversary. Anything less than an armed military escort should be unacceptable, given U.S. insistence on an armed escort for any shipment of MOX fuel containing U.S.-origin reactor-grade plutonium from France to Japan. The United States should provide no less for shipments of U.S. weapons-grade plutonium.	14/13.00.00 cont.
Cost comparisons for the different plutonium disposition options should also reflect the cost of security requirements for sea shipments. U.S. naval vessels have been used in the past to protect plutonium shipments between France and Japan. This expense should be reflected in any cost evaluations of the different disposition alternatives.	19/07.02.00 cont.
The DPEIS rules out air transport of any nuclear materials.⁴¹ This reflects the U.S. Government's correct rejection of the arguments made at the IAEA that MOX fuel is a "low-dispersible" material and therefore can be flown in a Type B cask. New Safety Series 6 regulations are expected to permit air shipment of MOX in a Type B cask, but the IAEA Board of Governors has not yet approved the new code. NCI has urged the Board to reject the new standards.⁴²	15/10.00.00 cont.

³⁹ DPEIS, p. 4-783.

⁴⁰ "Kansai Electric's Shipment Will Require Armed Escort Ship," July 21, 1993, press release from Plutonium Action Network - Kyoto. Also, letter from Fred McGoldrick, State Department, to Tom Chomura, Greenpeace International, October 21, 1993.

⁴¹ DPEIS, p. 4-772.

⁴² Letter to Dr. Hans Blix, Director General, International Atomic Energy Agency, from Paul Leventhal, President, and Dr. Edwin Lyman, Scientific Director, Nuclear Control Institute, February 26, 1996; IAEA response from Morris Rosen, Deputy Director General, March 23, 1996. NCI response to Mr. Rosen is in preparation. NCI press release, "NCI Demands as a Fraud a New IAEA Safety Standard for Air Shipments

10 02 00 **Comment Number 38**
Section G.1.2 of the PEIS describes port transit risk, which includes thermal (fire) conditions. Conservative port handling impacts based on the methodology described in Appendix G are presented in Table G.1-1. Pu and MOX fuel require the use of highly sophisticated Type B packagings that are specifically designed to prevent the release of contents under all credible transportation accident conditions (such as during handling in port). Appendix G has been modified to provide clarification for sea shipments and handling of Pu and MOX containers in port facilities.

10 02 00 **Comment Number 39**
Safety is in the packaging, which is specifically designed to prevent a release of radioactive material under all credible accident circumstances such as loading and unloading operations. Packaging is designed to withstand a drop test onto a flat, essentially unyielding surface. A yielding port surface could further reduce potential risk. The sequence of tests for ensuring the reliability of the 6M, Type B packaging is described in Section G.5 of the PEIS.

Air transport was the preferred option in the late 1980s for the return of plutonium from France to Japan. Air transport reduces many of the security concerns associated with sea shipment. However, there is no crashworthy cask available for air shipment of the plutonium or MOX fuels. Air shipment was rejected in favor of sea shipment after the Nuclear Control Institute raised Congressional concerns over the environmental consequences of an air crash involving plutonium shipment casks that could not withstand a high velocity crash.⁴³ No commercial cask is licensed for plutonium air transport in the United States.

Transport Safety Issues

Appendix G compares transportation impacts for the different disposition alternatives. The analysis understates the environmental hazards of transporting radioactive material by embracing the Type B transport standards and assigning a low probability to an accident that could result in a breach of the cask. The appendix disregards recent expert reports that challenge the adequacy of the Type B standards,⁴⁴ as well as ongoing initiatives within the IAEA and the International Maritime Organization (IMO) to re-evaluate these standards in the context of historical data about accident conditions. The DPEIS analysis is cursory and outdated, and must be revised to take into account the most recent studies and the ongoing IAEA and IMO re-evaluations of these casks.

The DPEIS suffers from the following defects:

- The DPEIS finds no "significant accident risks apart from the remote possibility of a major fire" involved in the handling and short-term storage of plutonium and MOX containers in port facilities. There is no further analysis of the risk of a major fire.⁴⁵
- The DPEIS dismisses the risk of a radioactive release were a container to be dropped during loading or offloading. The "yielding nature" of the port surface, it is claimed, would reduce the likelihood of a breach of the container.

⁴³ "Plutonium," March 1, 1996.

⁴⁴ The Markowski Amendment, Section 5061 of the Omnibus Budget Reconciliation Act of 1987 was enacted following release of NCI's Special Report, "Air Transport of Plutonium Obtained by the Japanese from Nuclear Fuel Controlled by the United States," March 3, 1987.

⁴⁵ Illinois Institute of Technology Research Institute (IITRI), "Definition of Bounding Physical Tests Representative of Transport Accidents—Air and Marine," IITRI KO6019, November 1983; ECO Engineering, Inc., Annapolis, MD, "A Review of the Proposed Marine Transportation of Reprocessed Plutonium from Europe to Japan, March 1992; Edwin S. Lynn, Princeton University School of Engineering/Applied Sciences, "Safety Issues in the Sea Transport of Verified High-Level Radioactive Wastes to Japan," December 1994.

⁴⁶ DPEIS, p. G-3.

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* The DPEIS reaffirms the ability of a type B package to survive a major shipboard fire. It repeats familiar arguments: the likelihood that a shipboard fire will occur in the same location as the cargo is relatively small; the duration of a shipboard fire does not necessarily mean any single package will be threatened; unless a package is "engulfed" by a fire, it does not matter whether the fire reaches sustained temperatures above the regulatory fire temperature of 800 degrees C., nor is the fire's duration likely to be a factor in maintaining the container's integrity.⁴⁶

At the same time, the appendix concedes that "[h]owever unlikely, there is always a potential for maritime accidents during the ocean shipment of Pu and MOX fuel."⁴⁷ It cites an environmental assessment of the import of Russian plutonium 238 which found that "fire alone is not a credible means of causing a release." "The probability of a severe ship collision, followed by a fire, is on the order of 1.0×10^{-4} per port call.(DOE 1993r:A-3)"

Probability statistics are not the best tool to establish the adequacy of a transport standard. In a paper presented to the International Maritime Organization's Special Consultative Meeting, Dr. Edwin Lyman, NCI scientific director, used the example of elastomer seal seals to illustrate the weaknesses of the type B standards.⁴⁸ The lid seals prevent the escape of radioactive gases from the cask following an accident. They will fail after exposure of a few hours to temperatures of 250 - 300 degrees C. However, the Type B thermal test is low enough so that the failure threshold is not reached. Therefore, "transport casks with elastomer seals are able to be qualified as Type B packages... the current regulations do not require the cask designer to determine the conditions which would cause the seal to fail and ensure that a large safety margin is present."⁴⁹

A 1992 report by ECO Engineering⁵⁰ also challenges the adequacy of Type B standards. The ECO report states, "Marine accidents involve significant forces and outcomes that appear to exceed the limits of the standards to which the casks are designed."⁵¹ The report describes fire, collision, immersion and sabotage as events that could cause the casks to fail.

⁴⁶ DPEIS, p. G-4.

⁴⁷ DPEIS, p. G-5.

⁴⁸ "Addressing Safety Issues in the Sea Transport of Radioactive Materials," by Edwin S. Lyman, PhD, Scientific Director, Nuclear Control Institute, presented to the IMO Special Consultative Meeting, March 4-6, 1996, London, England.

⁴⁹ Lyman, *ibid.*, p. 5

⁵⁰ "A Review of the Proposed Marine Transportation of Reprocessed Plutonium from Europe to Japan," ECO Engineering, March 30, 1992, prepared for Nuclear Control Institute and Greenpeace International.

⁵¹ *Ibid.*, p. 4.

10 00 00

Comment Number 40

The potential for a maritime accident was estimated based on several existing studies and data. The probability of a maritime accident would be small on the order of 1.0×10^{-8} /yr to 1.0×10^{-7} /yr, not per port call. DOE has considered the commenter's comments, but DOE remains convinced that the probability numbers were correctly stated in the Draft PEIS and therefore are included in the Final PEIS.

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10 00 00

Comment Number 41

Both Pu and MOX fuel would be transported in Type B packages that have been fully tested and certified for these materials, as required by Federal law. DOE, as a responsible shipper of hazardous materials, will comply with stringent Federal packaging requirements. It is noted that there is some controversy concerning the adequacy of the Type B packaging. However, these packages are currently certified as safe for transporting radioactive materials. If the safety certification for the packaging is withdrawn, then new analyses will be required. Acknowledgment of this controversy has been included in Appendix G of the Final PEIS.

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The duration and intensity of shipboard fires, the enormity of the energy levels associated with ship collisions, and the extent of hydrostatic pressure of the ocean depths, in any number of the consequences of acts of terrorism, would appear to create exposure environments beyond the limits of the risks designed in accordance with IAEA standards.⁷²

Sandia National Laboratories complained, in a rebuttal to the ECO report, that the accident conditions described in the ECO report exceed IAEA regulations. "Both U.S. and IAEA regulations make it clear that while the certification tests represent severe accident conditions, they do not represent maximum credible accident conditions."⁷³ Sandia wrote. In its response, ECO wrote it "did not intend to impute such claims to the regulators. Rather ECO's intent was to point out the potential for severe accidents occurring that might breach containment of a Type B packaging."⁷⁴

Given the amounts of plutonium and MOX that could be transported for disposition, it would be prudent to test the shipping casks to failure and to evaluate the findings in the FEIS.

V. Economic Issues

Like the non-proliferation analysis, the cost analysis of plutonium disposition options now being prepared by Oak Ridge National Laboratory must be integrated into the NEPA decision-making process. That analysis must include all costs of the various disposition options, including subsidies being demanded by nuclear electrical utilities that have expressed interest in using weapons-plutonium MOX fuel.

Given recent regulatory changes and the severe diseconomies of nuclear electricity generated at some facilities, these utilities face strong competition from non-nuclear electrical generators. An industry technical analysis fully anticipates that some utilities will insist upon not simply compensation for direct costs related to weapon plutonium disposition in their reactors, but subsidization of the electricity these reactors produce to guarantee that it is economically competitive with electricity from alternative non-nuclear sources, a subsidy that could cost U.S. taxpayers billions of dollars over the life of the

⁷² *Ibid.*, p. 10.

⁷³ "Safety of Shipments of Plutonium By Sea, U.S. Department of Energy, September 1993, Appendix B, "Review of the ECO Engineering, Inc. Report," by Sandia National Laboratories, p. 1.

⁷⁴ "Clarification for Appendix B of the Study: 'Safety of Shipments of Plutonium by Sea,' DOE/EM-0103, September 1993

07 00 00 Comment Number 42

In the *Technical Summary Report for Surplus Weapons-Usable Plutonium Disposition* potential fees to reactor owners for existing LWRs to use MOX fuel were noted. The exact fees were not included in the report since there is no firm basis on which to estimate these fees that would result from a business negotiation between the Government and the reactor owner. The technical analysis, along with the cost and schedule analyses, will be part of the decisionmaking process to support the ROD.

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plutonium-disposition program.⁷⁹ These costs must be carefully calculated in advance, so that they can be taken into account in the decision on disposition alternatives.

Steven Delley
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42/07.00.00
cont.

⁷⁹ One study calculates that such a subsidy may run as high as six cents per kilowatt-hour, depending upon the utility and plants, equivalent to billions of dollars. GE Nuclear Energy, *Study of Plutonium Disposition Using Existing GE Advanced Boiling Water Reactors*, NEDO-72161, Prepared for the U.S. Department of Energy, June 1, 1994, p. 12-4.

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COMMENTS ON THE DEPARTMENT OF ENERGY'S
STORAGE AND DISPOSITION OF WEAPONS-USABLE FISSILE MATERIALS
DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Public and Occupational Health and Safety Issues

Submitted by

Edwin S. Lyman, PhD
Scientific Director
Nuclear Control Institute

June 7, 1996

Strategies for stopping the spread and reversing the growth of nuclear arms.
Paul L. Lavenda, President; Peter A. Bradford, David Cohen, Denise A. Hovis, Julian Koenig, Sharon Turner, Roger Richter, Dr. Theodore B. Taylor
BOARD OF DIRECTORS

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Edwin S. Lyman, PhD
Scientific Director
Nuclear Control Institute
June 7, 1996

Comments on the Department of Energy's
Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Public and Occupational Health and Safety Impacts of
Plutonium Disposition Alternatives

Conversion of surplus weapons-usable plutonium (WU-Pu) to the spent fuel standard can provide a great benefit to disarmament and non-proliferation, especially if there is reciprocal action on the part of Russia. However, this significant benefit comes at a price. All disposition options under consideration in the DPEIS involve multi-year campaigns involving large-scale processing of WU-Pu and other extremely hazardous radionuclides. Furthermore, for the large fraction of surplus WU-Pu that is now in the form of weapons components, WU-Pu in relatively stable solid form must be converted to highly dispersible intermediate process streams and subjected to a number of energetic processes such as oxidation and treatment at high temperature. Because of the possibility of a catastrophic accident in a processing facility or during irradiation in a nuclear reactor, the implementation of disposition will be associated with a substantial increase in the risk of dispersal of a large quantity of WU-Pu.

For this reason, a major objective of the DPEIS should be the presentation of a thorough and consistent evaluation of the occupational and public health risks of different WU-Pu disposition options. Disposition options should be ranked according to the risks that they pose, and this ranking should play an important role in the final selection.

It has often been argued that environmental impacts need not be a decisive factor in choosing a WU-Pu disposition option because the risks of any option will be small compared to those incurred when the WU-Pu was produced. However, this argument in no way negates the desirability of strictly limiting further harm from the aftermath of the Cold War. If the opportunity now exists to carry out the disposition program in a way that minimizes health and safety impacts, common sense dictates that the lowest-impact option should be given the most serious consideration, assuming it is not disqualified by other factors such as deleterious non-proliferation impact or excessive cost or delay.

The DPEIS, however, fails to accomplish this objective. The methodology it uses for evaluating and comparing the safety risks of different disposition options is logically inconsistent and confusing. Furthermore, possibly as a consequence of the large number of different groups involved in its preparation, it contains contradictory factual information. The errors and questionable assumptions in the documents referenced by the DPEIS cast

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09 09 08 Comment Number 43

Potential human health impacts from Proposed Actions are analyzed and documented in this PEIS as required by NEPA. To inform the public and decisionmakers, all latent cancer risks associated with the alternatives are presented in the PEIS regardless of their risk magnitude. The ranking or decisionmaking analysis of the alternatives will be based on various factors including human health impacts. DOE's intent in the PEIS is to provide an unbiased environmental analysis of all alternatives. However, the Reactor Alternatives generally do have more available information than other disposition alternatives because of industry experience.

08 03 01 Comment Number 44

Comment noted.

09 09 08 Comment Number 45

Based on comments received from the public and other reviewers, revisions have been made to the PEIS to clarify information that was incorrect or unclear. These revisions appear in the Final PEIS.

considerable doubt on its quantitative accuracy. The most problematic consequence of the inconsistencies plaguing the DPEIS analysis is an exaggeration of the risks of the immobilization options relative to the reactor-based options. This must be corrected in the final version in order to provide a fair presentation of the evaluation and ranking of the safety risks of the various options. Such a presentation would show that the health and safety impacts of the immobilization options will be substantially lower than those of the reactor options. However, as shown below, the DPEIS is structured to minimize the significance of this fact. Whether deliberate or not, this has the effect of biasing the whole document toward the reactor options.	45/09.09.08 cont.	09 09 08	Comment Number 46	The health impacts from accidents are very difficult to compare using bar graphs. The bar graphs distort the relative health impacts among the alternatives (for example, a normally small number appears large when compared with a very small number). Therefore, to avoid confusion, the comparison bar graphs were not used in the Final PEIS.
<u>1. Inconsistencies in the DPEIS health and safety methodology.</u> a) Incompleteness of accident evaluation criteria In Section M.5.1.1., it is stated that "the potential for facility accidents and the magnitudes of their consequences are important factors in the evaluation of ... storage and disposition alternatives," and that "the health risk issues are twofold." These two issues are identified as 1) whether accidents at any of the facilities pose unacceptable health risks to workers or the public, and 2) whether alternative locations for facilities can provide lesser public or worker health risks. This list of issues to be considered in evaluating accident impacts of disposition is clearly incomplete. In particular, the question of whether alternative <i>disposition options at a given location</i>, rather than alternative <i>locations</i>, can provide "lesser public or worker health risks" does not seem to be regarded in the DPEIS as a worthy criterion for consideration. This is confirmed by the absence of a graph in the Summary comparing accident impacts of different options. But such a comparison is clearly legitimate and meaningful, and therefore essential.	43/09.09.08 cont.	09 09 08	Comment Number 47	The health risk assessment from the potential accidents in this PEIS is analyzed to "envelope" the potential accident impacts ranging from high probability-low consequence to low probability-high consequence. Although it is believed that the health risk from all potential accidents would fall within this "envelope," it is difficult to identify all of potential individual accidents for all of the proposed facilities since most of the proposed alternative facilities are still in early development stages. The risks for the accidents are calculated based on the health effects from the set of the accidents analyzed for each alternative in the PEIS. Whether the set of accidents selected covers all potential accidents for the facility depends on the complexity of the facility and the maturity of the design. Therefore, it is not appropriate to compare the risks for the accidents between the alternatives. However, it can be used for comparing the facility accident impacts among different sites within an alternative since they use the same set of the accidents. The expected risk was not used for the summary comparison of the alternatives. The PEIS provides the consequences, probabilities, and risk of the utilization of MOX fuel for Pu disposition.
Discouraging the relevance of the comparative accident impacts of different disposition options biases the DPEIS analysis toward the reactor options. This is not completely clear from the data provided by the DPEIS itself. According to the DPEIS, the maximum risks of cancer fatalities to workers and the public resulting from accidents at a plutonium vitrification facility are two to three orders of magnitude below those resulting from accidents involving evolutionary LWRs (E+L WRS).¹ On the other hand, data in the DPEIS implies that the expected risks, computed by weighting the consequences of individual accident sequences with their expected probabilities, are comparable for the two	46/09.09.08			
	47/09.09.08			
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¹ Storage and Disposition DPEIS, Attachment B, Pg. S-150.

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47/09.09.08 cont.	options. However, when the many problems with the DPEIS accident analysis are corrected, as detailed below, we expect that the immobilization options will prove to have significantly lower impacts than the reactor options with respect to all measures of accident severity, including "expected" risks.
48/09.09.08	The DPEIS downplays the significance of "discernible differences [in health and safety impacts] among alternatives" by stressing that although in some cases the potential accident risks of the immobilization options are indeed much lower than those of the reactor options, "the risks associated with implementing any of the alternatives is small," a statement provided without adequate justification. Particularly problematic is the use of generic probabilistic risk assessment (PRA) results to provide values for the absolute accident risks of different options. It is widely accepted that while PRAs are useful in understanding comparative risks, e.g. how modifications to a particular plant can improve safety, they are far less useful (and credible) in generating values of absolute risk.
49/09.09.08	The credibility of the absolute risk values cited in the DPEIS is further damaged by the numerous errors, omissions and inconsistencies contained in the analysis of reactor accidents (especially in existing LWRs), which could lead to an underestimation of the actual risks of using MOX by several orders of magnitude. Some of these are described in more detail below.
50/09.09.08	The DPEIS does not explain its risk methodology clearly. A section on "risk" purports to argue that the risks from accidents during plutonium disposition should be considered in the context of other, more common risks, such as death from accidental poisoning. However, even this discussion is misleading since it uses as an example a comparison of the annual risk from a plutonium storage accident (itself one of the smallest accident risks tabulated in the DPEIS) over the lifetime risks from these more common hazards, thereby overstating them by a factor of 70.¹ If, for instance, one considers the annual risk as a result of an accident at an Ev-LWR, the difference between the risks of the reactor disposition option and the "common risks" cited in the DPEIS, is not as striking. The (lifetime) risk from accidental poisoning, according to the DPEIS, is 1/1000, so the annual risk is 1.4×10^{-4}; the expected risk from an Ev-LWR accident at the Oak Ridge plant is given as 1.2×10^{-4} (pg. M-366). If this value were adjusted to correct for the underestimation by several orders of magnitude of volatile and semi-volatile releases in a beyond-design-basis accident (see below), it becomes apparent that some of the activities listed in the DPEIS can have risks approaching the so-called "common" risks.
43/09.09.08 cont.	Although it can be useful to put the absolute risks of disposition activities into perspective, this should not be used to obscure the fact that the immobilization options provide minimum-risk alternatives for WU-Pu disposition.

¹ Storage and Disposition DPEIS, Section M.5.1.1.2, p. M-226.

² Storage and Disposition DPEIS, Section M.5.1.1.1, p. M-225.

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09 09 08 Comment Number 48

Both the human health consequences (potential cancer risk for the MEI of public and worker and latent cancer fatalities to the general public) from the postulated accidents and the frequency of the accident occurrence are evaluated and reported in the PEIS. The health effects from potential accidents in this PEIS are not based on the facility probabilistic risk assessment (PRA). At this programmatic level of NEPA review for disposition, specific disposition facilities are not being proposed so as to support a facility-specific PRA. Additional facility-specific analyses would be provided in subsequent tiered NEPA review.

09 09 08 Comment Number 49

In response to public comment, the accident analyses for existing LWRs has been modified in the Final PEIS.

09 09 08 Comment Number 50

Section M.5 of the PEIS contains evaluation methodologies and assumptions used in analyzing facility accidents. The discussion presents the risks in terms of the commonly used units ascribed to each risk. The information provided is not meant to imply that risks of a latent cancer fatality caused by DOE operations are trivial, but rather to show how they compare with other more familiar risks. Based on comments received from the public and other reviewers, revisions have been made to the PEIS to clarify information that was unclear. These revisions appear in the Final PEIS.

b) Absence of explicit evaluation of can-in-canister immobilization options

Some of the WU-Pu disposition options under consideration in the DPEIS can be implemented in a variety of ways. In Volume I, Section 2.4, p. 2-76, the methodology that was used for determining which variant of a particular disposition option should be chosen for full evaluation in the DPEIS is discussed. In particular, it is stated that "bounding" variants were selected, e.g. those which were likely to have environmental impacts equal to or greater than all the other variants under consideration. This approach was used to explain why only the "greenfield" immobilization options that require a new, shielded immobilization plant were explicitly analyzed, rather than the options that "piggyback" on operations at existing facilities, such as the can-in-canister (CIC) approach at the Defense Waste Processing Facility (DWPF) at the Savannah River Site (SRS). The CIC approach will have lower environmental impacts than greenfield approaches because in the latter approach, only the incremental risks associated with WU-Pu immobilization would be charged to the disposition program.

This could be a legitimate approach, provided that it were consistently applied, which is not the case in the DPEIS. The DPEIS evaluates reactor options that require construction of new, evolutionary LWRs (Ev-LWRs) and those involving irradiation of MOX fuel in existing LWRs (Ex-LWRs) (except in the important category of accident impacts). This is apparently not judged in the DPEIS to be inconsistent with the approach used for immobilization options because it treats the reactor proposals as different "options," rather than variants of the same option. However, this is merely a semantic distinction.

Because only incremental impacts are considered in the Ex-LWR case, but not in any of the immobilization options, the reader can get the misleading impression that the Ex-LWR reactor option could have comparable or even lower normal radiological impacts than any of the immobilization options (e.g. Summary, Figs. S-17 and S-18; Attachment B, pgs. S-142 to S-145) and can even provide a net benefit (although this benefit disappears when the impacts of MOX fabrication are considered). The DPEIS even goes as far as to include a section on the incremental benefits of using MOX fuel in reducing the health impacts of the nuclear fuel cycle, a section which is completely irrelevant to the particular mission of WU-Pu disposition and is completely wrong as well (see below).

For consistent treatment of "incremental" radiological impacts, there should be a comparison of the Ex-LWR options with the CIC options. In these options, plutonium first would be immobilized in glass or ceramic, without the addition of cesium-137 for spiking purposes, and packed in small cans. These cans would then be placed in the DWPF canisters prior to filling with HLW glass. The incremental environmental impacts of this approach would be those associated with operation of the plutonium immobilization line only (assuming that the introduction of the small cans would not have a detrimental effect on DWPF operations, as results from cold testing of CIC at DWPF clearly indicate).

05 00 08 Comment Number 51

Comment noted. Appendix O, *Can-In-Canister Variants*, was added to describe the variant of the Vitrification Alternative.

05 00 08 Comment Number 52

Comment noted.

09 09 08 Comment Number 53

The human health impacts are presented for both the existing condition (No Action) and the action alternatives in the PEIS, including the Existing LWR Alternative. (The health impacts from potential accidents for all three Reactor Alternatives using MOX fuels are presented in the Final PEIS.) Incremental impacts are those impacts from each alternative over the existing conditions. In response to public comment, Section 4.3.5.2.9 of the Final PEIS has been revised to show incremental and total impact. For normal operations and accidents, both incremental impacts and total impacts are presented in the PEIS for each reactor disposition alternative. Also, an inclusion of potential avoided environmental impacts is appropriate to the NEPA process; however, in response to public comments, this section has been revised.

09 09 08 Comment Number 54

The can-in-canister variant is one of a number of potential applications of the Vitrification Alternative. The environmental impacts of the can-in-canister variant, which uses the same facilities as the Vitrification Alternative, are bounded by the impacts of the vitrification analysis shown in the PEIS. Appendix O, *Can-In-Canister Variants*, was added to describe this variant of the Vitrification Alternative.

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09/09/08 Comment Number 55

Depleted uranium (independent of the HEU disposition), which is currently in the DOE stockpile, is assumed to be used to blend Pu into MOX fuel. Since no new uranium mining, milling, conversion, or enrichment would be needed to produce MOX fuel, the impacts of these uranium fuel cycle steps would be avoided.

One can show, using figures given in the DFEIS, that the incremental normal radiological impacts of CIC options would be about two orders of magnitude smaller than those from a greenfield immobilization facility. This can be seen most easily by comparing the doses received by the public from normal operation of the ceramic immobilization facility in the deep borehole option, in which case no cesium-137 is used, and those from a greenfield ceramic immobilization facility, in which case cesium-137 is added directly to the ceramic during processing. From Tables M.2.9-3 and M.2.9-4 of the DFEIS, one sees that routine emissions of plutonium from ceramic immobilization facilities located at SRS account for about 4% and 2% of the total dose to the maximally exposed individual (MEI) and the committed effective population dose equivalent, respectively, the rest being due to Cs-137 emissions. Similar reasoning can be applied to the accident analysis of greenfield immobilization facilities given in the DFEIS to extract the incremental risks associated with CIC. For example, the annual risk to the MEI from accidents at a greenfield vitrification facility at SRS is 1.1×10^{-6}, according to Table M.5.3.5.2-6. To obtain the incremental impacts of the CIC approach, one should only consider accidents resulting in releases of plutonium and subtract the doses due to Cs-137 releases. This approach yields an annual risk from CIC to the MEI at SRS of 1.6×10^{-8}, about a factor of one hundred smaller than the greenfield risk. Because the CIC approach has significantly smaller radiological impacts than the greenfield immobilization, and because it is analogous to the Ex-LWR option, it should be treated as a distinct option and fully evaluated in the FEIS. c) Absence of evaluation of incremental accident impacts of the existing LWR option The DFEIS assumes that there are no incremental accident risks associated with the substitution of MOX for low-enriched uranium (LEU) in Ex-LWRs, which makes this option appear to be essentially zero-risk. This statement is simply not justifiable for a number of reasons which are discussed in detail below. In fact, the incremental accident risk of this option may well exceed the absolute risk of the Ex-LWR option. d) Incorrect analysis of "avoided human health impacts" due to substitution of MOX for LEU Volume II, Section 4.9 of the DFEIS is entirely wrong and should be corrected or deleted from the final version. In attempting to compare the risks of the MOX and LEU fuel cycles, the authors of the section seem to have forgotten that MOX fuel is about 95% uranium. Thus it is completely wrong to claim, as they do, that there are no health impacts associated with the uranium mining, milling and conversion stages in the MOX cycle. The stage of the cycle which is bypassed is uranium enrichment, which is well-known to have very low health impacts anyway.	54/09.09.08 cont.
Because the CIC approach has significantly smaller radiological impacts than the greenfield immobilization, and because it is analogous to the Ex-LWR option, it should be treated as a distinct option and fully evaluated in the FEIS. c) Absence of evaluation of incremental accident impacts of the existing LWR option The DFEIS assumes that there are no incremental accident risks associated with the substitution of MOX for low-enriched uranium (LEU) in Ex-LWRs, which makes this option appear to be essentially zero-risk. This statement is simply not justifiable for a number of reasons which are discussed in detail below. In fact, the incremental accident risk of this option may well exceed the absolute risk of the Ex-LWR option. d) Incorrect analysis of "avoided human health impacts" due to substitution of MOX for LEU Volume II, Section 4.9 of the DFEIS is entirely wrong and should be corrected or deleted from the final version. In attempting to compare the risks of the MOX and LEU fuel cycles, the authors of the section seem to have forgotten that MOX fuel is about 95% uranium. Thus it is completely wrong to claim, as they do, that there are no health impacts associated with the uranium mining, milling and conversion stages in the MOX cycle. The stage of the cycle which is bypassed is uranium enrichment, which is well-known to have very low health impacts anyway.	5/01.02.00 cont.
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09 09 08	Comment Number 56
The depleted uranium for the MOX fuels is already in DOE's stockpile and is independent of the DOE's HEU disposition program.	
09 09 08	Comment Number 57
Like any other EIS, a realistic impact area has to be defined to conduct a radiological impact assessment. Federal guidance defines two major impact regions. NUREG-0654 defines 16 km (10 mi) as the plume exposure region and 80 km (50 mi) as the ingestion exposure region for the nuclear facility accident emergency planning zone. While populations at greater distances may receive some exposure from an accidental release of radioactive material into the environment, this exposure would be considerably less than the exposure to the population within the 80-km (50-mi) region. Also, extending the assessment to further distances would introduce greater analytical uncertainties to the calculated impacts.	
It is acknowledged that, if the source term was very large, the boundaries chosen could be extended. Nevertheless, NUREG guidance is an appropriate and reasonable choice for NEPA analysis.	

56/09.09.08	Although not explicitly stated, the authors may be assuming that depleted uranium stockpiles will be used to fabricate MOX fuel, in which case the associated mining and milling steps (but not conversion) will be avoided. This is a legitimate point, but by the same reasoning, one can also give credit to stockpiles of uranium that can be used in the LEU route, such as LEU obtained from the blend-down of surplus HEU. The relatively small amount of electricity that would be generated from MOX fuel fabricated from surplus weapon plutonium could easily be displaced by the LEU equivalent of about 30 tonnes of HEU. Thus one cannot consistently assign an incremental health benefit to the US MOX program.
57/09.09.08	e) Inappropriateness of 80-km limit for consideration of public health impact The restriction of evaluation of public health impacts to within an 80-km radius of the facility in question leads to some peculiar inconsistencies in the comparison of immobilization and MOX options. For instance, according to the DPEIS the CANDU option appears to have no public health impacts on the U.S. population, other than those resulting from the small risk associated with the production and transport of MOX fuel within the U.S. Yet a quick look at a map reveals that a release of radiation from the Bruce A station in Ontario would most likely affect a large portion of the northeastern United States, although mostly at distances greater than 80 km. Furthermore, the 80-km truncation conceals the fact that a large-scale reactor accident can have national and even global impact, whereas an accident at an immobilization facility would in all likelihood be much more limited in geographical range. This is because both the source term and the energy available for dispersion would be much smaller in the case of the immobilization facility. Thus truncating consideration of public health impacts at 80 km greatly overestimates the risks associated with immobilization compared with MOX.
49/09.09.08 cont.	2. Serious flaws in the safety analysis of reactor options The health and safety analysis of the MOX options in the DPEIS contains such serious flaws that DOE should discard the analysis as written and start over, proceeding in a clear and logical manner. The use of MOX in LWRs or CANDUs—in particular, full-core MOX utilizing weapons-grade plutonium as proposed in the DPEIS—is a novel practice associated with numerous unsolved and potentially very serious safety risks. Experience with LWR MOX use in other countries, which is often cited by promoters of the MOX options, is of limited applicability to the planned US program because the foreign programs utilize plutonium with different isotopic contents, lower MOX core fractions, and fuel without integral burnable absorbers. In addition, experience to date with the use of MOX has revealed a number of significant safety issues which remain unresolved. The existing LWR (Ex-LWR) option, which is probably the MOX option most likely to be chosen, must be singled out for special concern. Yet the DPEIS contains no accident analysis specific to this option.

09 09 08 Comment Number 58

The impacts and risks associated with the use of MOX fuel in existing commercial LWRs and in evolutionary LWRs have been reanalyzed. The results, which have a quantitative basis, are presented in Sections 4.3.5.2.9, 4.3.5.4.9, and M.5.3.10 of the Final PEIS.

08 03 00 Comment Number 59

The Department of Energy acknowledges the commentor's concern about the accident analysis used in the PEIS for the Reactor Alternatives. The accident analysis is at a level of detail and specificity needed for a programmatic decision on the disposition of weapons-usable fissile materials. Additional analysis for three cases of accident release scenarios was added to Section 4.3.5.2.9 of the Final PEIS. Impacts for one case are shown in Table 4.3.5.2.9 of the Final PEIS. Further detailed, technology-specific accident analysis will be included in the subsequent tiered NEPA review.

The DPEIS dispenses with fundamental issues of MOX safety in one paragraph, in which it alludes to "separate studies" (which were mistakenly left unreferenced) that "indicate that the use of MOX fuel in a ... LWR does not increase the risk and consequences of accidents."⁴ Most of these source documents turn out to be studies based entirely on reactor vendor analyses which purport to confirm the safety of using MOX in their reactors. However, at least one of the reactor vendors freely admitted to us that its in-house analyses were biased and unreliable.⁵ Closer examination of these studies reveals that they in no way provide adequate justification for the above statement in the DPEIS. In fact, at least one of the references, the National Academy of Sciences study "Management and Disposition of Excess Weapons Plutonium: Reactor-Related Options," actually contradicts the statement by estimating that the consequences of a severe accident could increase by 10-20% as a result of the substitution of MOX for LEU. Such an increase, far from being insignificant, could overwhelm the radiological impacts of any of the other disposition options. Furthermore, the discussion below indicates that the NAS may have underestimated the incremental consequences.

DOE may have judged that this shoddy and incomplete accident analysis was sufficient for the purposes of the DPEIS because, if the MOX option were chosen, safety issues would be dealt with later in the context of NRC review of the procedure. However, this defers the purpose of the whole exercise, which is to inform decision-making with an accurate comparative assessment of risks. To conform to the spirit of NEPA, a deeper understanding of the potential risks involved with the use of MOX in LWRs in this country must be acquired prior to the public comment period and should not be deferred until after decisions are made. The NRC and independent experts should be brought in at the DPEIS stage to provide alternative perspectives on the outstanding safety issues. This would be a prudent course of action, since unanticipated safety questions that arise later in the process could serve to cause unacceptable delays in disposition.

The only DPEIS reactor alternative for which any information concerning accident impacts is provided is the Evolutionary LWR (Ev-LWR) option. In the Summary, the reader is informed that "comparable data are not available" for the existing (Ex-LWR) option. DOE may be assuming here that the accident impacts of the Ev-LWR option bound those of the Ex-LWR, since the full impact of an accident would have to be charged to plutonium disposition in the former case, whereas in the latter case, one only need consider incremental impacts, e.g. the difference in risk between an existing reactor fueled with MOX and the same reactor fueled with LEU. Since the DPEIS claims without justification that there is no difference in risk, it implies that the Ex-LWR is a zero-risk option. However, this logic is faulty and renders the accident analysis in the DPEIS unusable for decision-making purposes.

⁴ DPEIS, Volume II, pg. 4-630.

⁵ Personal communication with General Electric executive, September 1995.

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09 09 08 Comment Number 60

The impacts and risks associated with the use of MOX fuel in existing LWRs has been reanalyzed. The analysis is in accordance with DOE, Office of NEPA Oversight guidelines for the preparation of EISs (*Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements U.S. Department of Energy, Office of NEPA Oversight*, May 1993). The guidelines require an assessment of impacts due to potential severe accidents which have frequencies of occurrence in the range of 1.0×10^{-7} to 1.0×10^{-6} /yr. The guidelines state that, as a practical matter, events with probabilities less than 1.0×10^{-7} /yr will rarely need to be examined. The analysis was based on the best available information at the time the Final PEIS was prepared. The results of the analysis, which have a quantitative basis and utilize the Melcor Accident Consequence Code System (MACCS) code, are presented in applicable sections of the Final PEIS. The analysis includes a determination of the sensitivity of americium, curium and Pu to the risk dominant accident doses for a commercial MOX fueled reactor and the results are described in the Final PEIS.

While cesium-137 (Cs-137) source terms from extraordinary reactor accidents (Reactor Class 5 accidents) may exceed release fractions analyzed in the PEIS, the beyond design basis accident selected for analysis (Reactor Class 2 accident) has a frequency of occurrence of 1.3×10^{-7} , which is consistent with NEPA guidelines. While Chernobyl accident releases of Cs-137 may have exceeded 20 to 40 percent of the cesium core inventory, such release fractions are not applicable to U.S. LWRs. The analysis of severe accidents (Reactor Class 5 accidents) is appropriate for PRAs or Safety Analysis Reports (SAR). Should the Reactor Alternative using MOX fuel be selected as the Preferred Alternative, subsequent tiered-NEPA documents or SARs will be prepared on site-specific bases.

The PEIS was modified in Section 5.3.11 to include a review of the radioisotopes discussed in the Sandia report. This report discussed using the MACCS code for curium and other transuranic radioisotopes. The contribution of americium (Am-241), curium (Cm-242 and Cm-244), and plutonium (Pu-238, Pu-239, Pu-240, and Pu-241) was added to the accident section of this PEIS.

a) Inadequacy of the Ev-LWR accident analysis in general

Before addressing whether the risk values resulting from the LEU-fueled Ev-LWR accident analysis contained in the DPEIS are also valid for a MOX-fueled Ev-LWR, it should be pointed out that these values are inaccurate even for the case to which they are supposed to explicitly pertain. The Ev-LWR analysis included in the DPEIS greatly understates the potential risks of an accident involving a LEU-fueled LWR, even one of "evolutionary" design. The "evolutionary" designs, such as the GE ABWR, do not contain the advanced safety measures, such as those proposed for the European Power Reactor, which would nearly eliminate the risk of a catastrophic off-site release of radiation (e.g., a double containment structure), and thus are still vulnerable to such events. However, Ev-LWR vendors claim that the risk of such events will be greatly reduced relative to the current generation of Ev-LWRs.

The most severe Ev-LWR beyond design-basis accident included in the DPEIS is an anticipated transient without scram (ATWS), followed by loss of core cooling, core meltdown, and full containment failure. The frequency of this accident is listed as 1.7×10^{-7} per reactor-year. However, the associated radionuclide source term, which references the General Electric Advanced Boiling Water Reactor (ABWR) Safety Analysis Report and studies prepared by a consultant for another purpose, is much smaller than that which could conceivably result from a loss-of-containment accident.*

For instance, the postulated release of Cs-137 to the environment is 230 curies (Ci), which is seen to correspond to a release fraction of 1.8×10^{-3} when compared to the end-of-cycle Cs-137 Ev-LWR core inventory of 1.3×10^7 Ci given in a source document (which itself references ABWR safety analyses).⁷ This release is substantially below the maximum possible release of cesium, which is semi-volatile and can be almost completely evolved from the core during a meltdown. It is now accepted that 20-40% of the cesium core inventory was released to the environment during the Chernobyl accident.

In fact, if one looks at the entire ABWR severe accident spectrum, which does not appear in the DPEIS but is included in one of the source documents,⁸ one sees that the Cs release fraction can be as great as 3.5×10^{-1} in a certain class of accidents known as Release Class (RC) 5, whereas a release of 2×10^{-5} in the DPEIS accident appears to corresponds to

* DPEIS, Volume III, Appendix M, Table M.5.3.8.1-2, p. M-361.

⁷ LLNL 1996g, op. cit. Table 8-1, p. 8-10. Although the Cs-137 value cited above is reasonable, one should note that this table is otherwise unreliable, with some entries clearly wrong (e.g., a core inventory of 5.4×10^7 Ci, or 8.7 MT, of Pu-239, is given for a LEU-fueled Ev-LWR), and others inconsistent with values given in the DPEIS (for instance, a release of 4.4×10^6 Ci of Kc-85 is postulated in the DPEIS, whereas the core inventory in Table 8-1 is only 1.2×10^5 Ci). Inconsistency among the various source documents is a general feature of the DPEIS.

⁸ LLNL 1996g, Table 8-1, p. 8-14.

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a Release Class 2 event, which is said to occur with a frequency of 1.3×10^{-7} . There is a similar disparity in iodine release fractions between RCS and RC2. RC2 is also characterized by zero release of other semi-volatiles (e.g. Te, Ru) and low-volatiles (e.g. Sr and Ba). While the RCS release fraction is a factor of 20,000 greater than the one assumed in the DPEIS, the associated accident frequency is listed as 2.2×10^{-4} , which is only a factor of ten smaller. Thus the risk of the RCS accident (e.g. probability times consequences) due to cesium emission is on the order of one thousand times greater than that of the DPEIS accident. Of the eight release classes listed, four have larger risks associated with them than RC2, the one included in the DPEIS. There is no legitimate basis for excluding these other accidents from consideration. However, their exclusion artificially underestimates the potential environmental impacts of reactor disposition relative to the immobilization options, leading to erroneous conclusions.

b) Inadequacy of the Ev-LWR accident as an upper bound for Ex-LWR accident impacts

There are two interrelated reasons why the Ev-LWR accident analysis in the DPEIS cannot be considered to be bounding or conservative with regard to the potential accident impacts of the MOX options.

First, it is based on analysis of an Ev-LWR fueled with LEU instead of MOX, and thus completely sidesteps the complex but crucial issue of whether and to what extent severe accident parameters, such as core damage frequencies (CDFs) and source terms, may differ for an Ev-LWR fueled with full-core MOX rather than LEU.⁷

Second, the Ev-LWR analysis contains numerous assumptions with regard to safety features which are specific to advanced reactor designs and simply do not apply to the MOX options based on use of existing LWRs (Ex-LWR) or CANDUs. For instance, advanced LWRs are assumed to have CDFs at least an order of magnitude smaller than those associated with LWRs operating today. Also, the source terms employed in the beyond design-basis accident analyses are based on assumptions about the likelihoods of various accident scenarios which are indisputably invalid for currently operating reactors (and may not even be valid for Ev-LWRs, which to date exist largely on paper).

To assess whether the Ev-LWR case is bounding or not with respect to accident impacts, one must determine, in light of these two factors listed above, whether the incremental risks of substituting MOX for LEU in Ex-LWRs may actually exceed the absolute risk values for (LEU-fueled) Ev-LWR operation provided in the DPEIS. The best way to do this consistently would be to derive complementary cumulative distribution

⁷ Although one of the main references for the DPEIS section on Ev-LWR safety is a document (Evolutionary/Advanced Light Water Reactor Data Report, UCRL-ID-123411, February 1996), which does contain some discussion of the differences between MOX and UO₂ source terms, this information is apparently not used in the DPEIS for the development of accident risk values. Instead, data from two other documents which refer exclusively to UO₂-fueled LWRs are used.

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The PEIS recognizes that there are uncertainties in the methodology for accident analysis as described in Section 4.1.9. There are additional uncertainties in the difference in reactor-grade versus weapons-grade MOX fuel. Although there is no experience in the United States for a full MOX core, DOE will consider a full MOX core only after evaluating lead test assemblies and/or a partial MOX core with weapons-grade material. This evaluation will reduce technical uncertainties between reactor-grade and weapons-grade MOX fuel. In addition, before a partial or full core can be utilized in a reactor, a reactor-specific safety analysis will be performed analyzing the use of weapons-grade MOX fuel.

09 09 08 Comment Number 61

The human health impacts for both the existing condition (No Action) and the action alternatives are evaluated and presented in the PEIS, including the Existing LWR Alternative (The health impacts from potential accidents for the three Reactor Alternatives using MOX fuel are also analyzed.) The incremental impacts are those impacts from Proposed Actions over existing conditions at same site. For example, the incremental impacts of using the partially completed LWR would be represented by the total impacts because the LWR was not operated before. The incremental impacts of using the existing LWRs would be represented by the differences between using the proposed MOX fuel and the current UO₂ fuel.

09 09 08 Comment Number 62

The Department of Energy determined that the bounding analyses for each of the disposition alternatives is an appropriate level of detail to support a programmatic decision. Site-specific environmental analysis of disposition technologies will be performed, as appropriate, for the next tiered NEPA documents. In response to public comment, Appendix O has been added which discusses the can-in-canister variant.

functions (CCDFs) for all three options and compare them.

Determination of the incremental risks of the Ex-LWR option is bound to be an extremely difficult and uncertain exercise. However, it is central to the whole disposition question. The public will want to know if there is significant risk involved in introducing MOX into Ex-LWRs and whether there are safer alternatives. The DPEIS sheds no light on this question and therefore fails to accomplish its mission.

Rather than try to determine which alternatives are bounding and which are not, the PEIS should simply provide enough information to accurately carry out the following comparisons: the incremental risks of the CIC immobilization options vs. the incremental risks of the Ex-LWR option (evaluated in a technically justifiable manner); and the risks of the greenfield immobilization options vs. the risks of the greenfield reactor options. The absence of such comparisons in the DPEIS makes it extremely difficult for the reader to obtain a clear understanding of the relative environmental impacts of the reactor and immobilization options.

Below, we will discuss a number of issues which support the notion that the substitution of MOX for LEU in Ex-LWRs may increase both the consequences and the probabilities of severe accidents by significant factors.

1) Beyond design-basis accident consequences: the issue of low-volatile source terms

The question of whether the consequences of a beyond design-basis accident in an Ex-LWR (e.g. core meltdown and containment failure) would change significantly if the reactor were fueled with MOX instead of LEU depends on the relative radionuclide inventories of the two cores and the radiological impact of the differences. The primary distinction is that the in-core inventories of the transuranic actinides Pu, Am and Cm are all greater by substantial factors in MOX cores. The magnitude of these factors, which depends on the initial plutonium loading in the fuel, is approximately on the order of 3 for plutonium isotopes, 5 for americium isotopes and 4 for curium isotopes at the end-of-cycle. (For MOX fabricated with reactor-grade plutonium, the curium inventory is greater by an additional factor of 10). Neptunium inventories actually are smaller in MOX cores, but the difference is only about a factor of two. Since these radionuclides are alpha-emitters with very high inhalation and ingestion radiotoxicities, and many have long half-lives, they can contribute significantly to the committed doses incurred following a reactor accident, especially via the ingestion and resuspension pathways, even if only a small fraction of the core inventory is released.

Using an argument dating at least as far back as GESMO, the Generic Environmental Impact Statement on the Use of Mixed-Oxide Fuel in Light-Water Reactors, DPEIS references claim that the increase in actinide inventories in a MOX core will not affect the consequences of an Ex-LWR accident because "plutonium and other insoluble

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fuel isotopes are not included in the releases to the environment."¹⁰ Thus according to this logic, it does not matter whether the inventory of actinides is greater in a MOX core because they are low-volatile species and will not be released to the environment even if the containment fails.

This argument is, plainly speaking, incorrect. There are circumstances under which significant releases of low-volatile radionuclides can occur.

First of all, the best possible laboratory for loss-of-containment accidents, the Chernobyl event, has demonstrated that significant and wide-ranging dispersal of non-volatile radionuclides is possible in beyond-design-basis accidents. The recently issued OECD review of the Chernobyl source term has concluded that the release fraction for low-volatile core constituents, including the actinides, was approximately 3.5%. Moreover, non-volatile fuel fragments were discovered as far away as Greece, over one thousand kilometers away.¹¹

The often-repeated argument that a Chernobyl-type accident cannot happen here does not mean that the dispersal behavior of the Chernobyl core does not have relevance for Western LWRs, should they be subject to beyond design-basis accidents with loss of containment (provided that the differences in core melt chemistry are taken into account). In fact, the NRC has acknowledged in the past that low-volatile releases as high as several percent of core inventory were possible in such accidents and incorporated this information into its state-of-the-art LWR probabilistic risk assessment (PRA), NUREG-1150.¹²

The DPEIS relies on vendor documents to support its claim that the release of low-volatile radionuclides would be insignificant in a beyond design-basis Ex-LWR accident. For example, the LWR PEIS Data Report quotes release fractions to the environment taken from a Westinghouse Hanford Company report. For low-volatile radionuclides, these values are all extremely small (the largest is 0.3%). The report then claims that these values are consistent with NRC's latest rulemaking on the issue of core-to-containment release fractions, NUREG-1465. "Accident Source Terms for Light-Water Nuclear Power Plants."¹³

¹⁰ Oak Ridge National Laboratory, *FNDR LWR PEIS Data Report*, Rev. 3, ORNL/MDLTR-42, December 1991, p. B-22.

¹¹ L. Dorell et al., "The Chernobyl Reactor Accident Source Term: Development of a Consensus View," OECD/NEA, OECD/NEA(96)12, November 1995.

¹² US Nuclear Regulatory Commission, NUREG-1150, 1987.

¹³ U.S. Nuclear Regulatory Commission, "Accident Source Terms for Light-Water Nuclear Power Plants," NUREG-1465, February 1995.

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09 09 08 Comment Number 63

The human health impacts from the potential LWR accidents were analyzed and presented in this PEIS. The health impacts will be evaluated for full MOX cores of the existing, partially completed, and evolutionary LWRs, and results are documented in the Final PEIS. The Chernobyl reactor is intrinsically different from the LWRs designed and operated in the United States. The design (including containment system design) and operation of the nuclear power plants in the United States prevent the Chernobyl-type accident consequences to happen in the United States with a probability greater than 1.0×10^{-7} /yr. While a Chernobyl-type accident could result in higher radionuclide releases, the radioactive releases from the accidents analyzed in the PEIS reflect a beyond design basis accident within the probability of occurrence (1.0×10^{-7}) that is acceptable for NEPA purposes. Also, any probabilistic risk assessment for the Proposed Action is beyond the scope of this PEIS.

09 09 08 Comment Number 64

NUREG-1465, *Accident Source Terms for Light-Water Nuclear Power Reactors*, was used in the LWR PEIS Data Report to support core-to-containment release fraction. Although NUREG-1465 has been questioned by the public, it represents the most recent guidance for release fractions. Public comment on this report is beyond the scope of this PEIS.

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It is true that NUREG-1465 tends to support the use of low-volatile release fractions lower than those used in NUREG-1150 and closer to the ones used by industry. This is not a coincidence, since the industry played a large role in revising NUREG-1465 to their liking. As described below, a careful look at the history of NUREG-1465, its supporting documentation and its domain of applicability indicates that the low-volatile release fractions it recommends are not sufficiently conservative for use in accident analysis of Ex-LWRs. It is therefore not relevant to the use of MOX in Ex-LWRs and should not be referenced in the DPEIS in this context. (A separate question is whether it has any validity at all).

The release behavior of the low-volatile radionuclides to containment from the molten reactor core during a severe accident is highly complex and dependent on details of accident progression that are not well understood; consequently, predictions of low-volatile release fractions are characterized by uncertainties spanning at least four orders of magnitude.¹⁴ This uncertainty has been exploited by the nuclear industry, which consistently chooses the lower bound of the range in its own assessments.

NRC originally issued a draft of NUREG-1465 in which the low-volatile release fractions were similar to those used in NUREG-1150, e.g. on the order of 2-3%. These values were strongly disputed by industry, which preferred release fractions hundreds of times lower, such as those proposed by EPRI (the Electric Power Research Institute) for use in assessments of Ex-LWRs.

Rather than try to establish a rational and conservative basis for source term estimation, NRC submitted to industry pressure and lowered the NUREG-1465 low-volatile release fractions by a factor of approximately 50. Was this change warranted? Not according to the Advisory Committee on Reactor Safeguards (ACRS), which wrote that "these adjustments need to be better justified or not be made."¹⁵ However, the ACRS' recommendation was ignored.

Industry comments on the draft of NUREG-1465 consisted of two main arguments as to why they believed its low-volatile release fractions were too high.¹⁶ First, they alluded to recent research that "demonstrated" that low-volatile release fractions from melted fuel were indeed much smaller than those assumed in NUREG-1150. Second, they argued that the use of mean values of release fraction data was not appropriate for the low-

¹⁴ H. Nourbakhsh, "Estimation of Radionuclide Release Characteristics Into Containment Under Severe Accident Conditions," U.S. Nuclear Regulatory Commission, NUREG/CR-5747, Nov. 1993.

¹⁵ US NRC Advisory Committee on Reactor Safeguards, letter to NRC Chairman Ivan Selin, September 20, 1994.

¹⁶ U.S. Nuclear Regulatory Commission, "Proposed Issuance of Final NUREG-1465," SECY-94-100, December 15, 1994.

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volatile radionuclides, because the uncertainty distributions range over many orders of magnitude. In distributions of this type, the mean is unduly influenced by values at the extreme upper end of the range. The EPRI low-volatile release fractions were based on the median of the distribution, which was typically two to three orders of magnitude below the mean.

The evidence supporting the industry position was summarized in a document prepared for DOE's Advanced Light Water Reactor (ALWR) Program by a consulting firm, Los Alamos Technical Associates (LATA).¹⁷ This report, which appears to have been accepted uncritically by NRC, is fundamentally flawed in at least one major respect and draws conclusions which are inconsistent with other NRC documents. The LATA report refers to a few experiments which observed small low-volatile release fractions, but notably omits discussion of one experiment in particular, the ST test series at the Annular Core Research Reactor (ACRR) at Sandia National Laboratories.¹⁸ The ST test series were noteworthy for their observation of unexpectedly high release fractions for low-volatile elements, such as europium (RF = 6.4%).

The LATA report referred to the ST series in passing, without describing their results, but dismisses them as irrelevant because they were conducted in a reducing atmosphere, which he contents "represents a special case that may exist only locally for brief periods of time in an accident." It neglected to mention that the ST series was conducted explicitly to evaluate the impact of a reducing atmosphere on fission product release, an environment which was not adequately represented in the existing database. This information was necessary, according to the authors of the ST-1 report, because "there are ... regions of actual reactor cores that are expected to be in atmospheres of nearly pure hydrogen during severe accidents."¹⁹

In fact, one of the major sources of uncertainty in charting the progression of reactor accidents is the temporal and spatial variation in oxidation potential that may occur in a particular sequence. The ST series of experiments demonstrate that these uncertainties are closely related to uncertainties in low-volatile release fractions. This point, although undoubtedly known to NRC staff, does not seem to have been taken into account when uncritically revising downward the NUREG-1465 release fractions according to the erroneous industry contention that "all" recent data support such a revision.

¹⁷ D. Orosick, "Low Volatile Fission Product Release During Severe Reactor Accidents," Los Alamos Technical Associates, Inc., Albuquerque, NM, prepared for the U.S. DOE Idaho Operations Office, DOE/ID-13177-2, October 1992.

¹⁸ M. Allen et al. "Fission Product Release and Fuel Behavior of Irradiated Light Water Reactor Fuel Under Severe Accident Conditions: The ACRR ST-1 Experiment," NUREGCR-5345, Sandia National Laboratories, November 1991.

¹⁹ *Ibid.*

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The question of oxidation potential is especially important with regard to americium. The volatility of metallic americium is greater by several orders of magnitude than that of the oxide, whereas for the other actinides the difference between metal and oxide volatility is not as great.

A major uncertainty in prediction of the release fraction of low-volatile radionuclides is associated with the vulnerability of Ex-LWRs to a class of accidents known as high-pressure melt expulsion (HPME) events. These are events in which the reactor vessel fails at high pressure leading to ejection of the molten core into the containment at high velocity and significant aerosol formation. HPME provides a mechanism by which relatively large fractions of low-volatiles can be converted to aerosol form in the containment atmosphere and therefore be subject to release into the environment. They should be distinguished from events in which the bulk of the core remains essentially intact throughout the meltdown.

According to NRC, the mean values of low-volatile release fraction uncertainty distributions into containment associated with HPME events in PWRs can be as high as 7%. One should note that the median values of these distributions are only about one order of magnitude less than the mean values, as opposed to the distributions of low-volatile in-vessel release fractions, in which the median is two to three orders of magnitude below the mean. Thus the industry argument that the mean values of low-volatile release fraction distributions do not accurately characterize the distributions does not apply to the HPME case.

HPME is of particular concern because of its relationship to another phenomenon known as Direct Containment Heating (DCH), in which the high heat transfer rates from the fuel aerosol causes a rapid rise in containment temperature that could lead to containment overpressurization and failure. HPME events, which are associated with both large low-volatile releases to containment and large probabilities of containment failure, can therefore result in large releases of low-volatiles to the environment as well.

These effects underscore the point that realistic source terms can only be generated by thorough analysis of specific accident sequences. NUREG-1465 provides representative release fractions for generic loss-of-containment accidents. As other NRC documents have pointed out, for radionuclides with release fractions spanning several orders of magnitude, such as the low-volatile species, neither the mean nor any other single measure contains enough information to accurately characterize the distribution. Knowledge of the actual details of the distribution is required to assess the likelihood of significant low-volatile releases in a particular accident sequence for a particular plant. Generic conclusions, such as those which appear in the DPEIS, are completely meaningless.

Given that large uncertainties in the prediction of low-volatile release fractions still exist, how significant is this issue on the actual consequences of a severe accident involving a MOX-fueled Ex-LWR? According to the DPEIS, it is not significant at all, because

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"other radioisotopes that are released in an accident have more serious impacts on human health than the Pu used in the MOX fuel."²⁰ However, not only is this statement an oversimplification (e.g. the increase in transplutonium actinides is ignored), but it is also wrong. Because of the relative radioactivity and longevity of some of the actinides, they can have significant impacts on accident consequences. According to a study done at Sandia, which used the MACCS code to evaluate the relative importance of different radionuclides to the public health consequences of a severe LWR accident, it was found that the curium isotopes in particular were highly significant both for early and long-term exposures.²¹ While the results obtained in that paper depend on the specific assumptions used in their model, they are useful to obtain a qualitative understanding of the importance of curium and the other actinides.

For instance, according to the results of the Sandia study, the ratio of the contribution of curium to cesium with respect to the total number of latent cancers resulting from an accident would be about 0.1, assuming Chernobyl release fractions of 0.4 for Cs and 0.035 for Cm, and core inventories characteristic of a LEU-fueled LWR. For a MOX-fueled LWR, the Cs inventory remains essentially the same, while the Cm inventory increases by a factor of approximately 4. This implies that the number of latent cancers due to the Cm release from a W-Pu MOX-fueled LWR would be about 40% of those due to Cs release. For plutonium isotopes, a similar calculation shows that the approximately three-fold increase in Pu release from a MOX-fueled reactor would result in a number of latent cancers about 80% of those due to Cs release. On the other hand, the decrease in Np would only translate into a few-percent decrease in the number of latent cancers. Because Cs release is the major contributor to latent cancers following an LEU-fueled LWR accident (typically 60% or greater), the Sandia result implies that the increased Cm and Pu releases from a severe accident affecting a W-Pu MOX-fueled LWR could result in a 50% increase in the total number of latent cancers as compared to an LEU-fueled LWR. (For R-Pu MOX, the increase would be significantly larger).

ii) Beyond design-basis accident probabilities

The DPEIS asserts that the substitution of MOX for LEU in LWRs would have no effect on the spectrum of accident probabilities. The document provides no evidence of this, nor does it even discuss a single safety-related issue associated with MOX use. Instead, it again refers the reader to vendor studies, which claim to demonstrate "substantial margins against limiting conditions" for transients involving MOX cores.

However, the situation is not nearly as straightforward as the DPEIS suggests.

²⁰ DPEIS, Vol. 2, Sect. 4.3.5.2.9, pg. 4-690.

²¹ D. Alpert, D. Chamin and L. Richlie, "Relative Importance of Individual Elements to Reactor Accident Consequences Assuming Equal Release Fractions," NUREG/CH-4467 (SANDIA-85-2575), Sandia National Laboratories, Albuquerque, March 1986.

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Fabrication and use of MOX fuel using reactor-grade Pu is a mature, industrial scale technology in Europe with at least three vendors actively fabricating MOX fuel. There are some differences introduced by the use of weapons-grade Pu, which DOE is addressing as part of an ongoing weapons-grade MOX fuel development program and fuel qualification program. As a part of this, DOE is consulting with the European fuel vendors to benefit from their experience. The fuel qualification program would include in-reactor irradiation of fuel pellets and assemblies. A commercial reactor used to disposition Pu would have to be licensed by the NRC. Part of this licensing process would include an extensive, independent review of safety and performance issues associated with the use of MOX fuel.

In addition to issues associated with using MOX fuel versus LEU fuel, there are uncertainties in the different reactor types (BWR versus pressurized water reactor [PWR]), reactor vendors (Westinghouse versus Combustion Engineering), and reactor sites. In addition to reactor type, reactor vendor, and reactor sites, there are reactor-specific variations in the number of cooling loops, the emergency core cooling system, the type of control rods, reactor vessel neutron and thermal history, and the type of fuel loading pattern (for example, low leakage). A reactor-specific safety analysis will be done to determine the effects on the neutronic and mechanical characteristics of the reactor system, as well as the effects of reactor-specific characteristics on the accident analysis including pressurized thermal shock, loss of heat sink, and other accidents. The effects of extended burnup of the fuel will also be evaluated to determine the safety margin including the departure of nucleate boiling (DNB) ratio and other parameters over the life of the fuel assemblies.

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There are significant outstanding safety issues associated with the utilization of MOX in LWRs, even with partial-core, reactor-grade MOX, which is the only case for which there is industrial-scale experience. In the case of full-core, weapons-grade MOX, for which there is no industrial experience, numerous additional technical uncertainties with serious implications for safety would arise.

GESMO, the Generic Environmental Impact Statement on the Use of Mixed-Oxide Fuel in Light-Water Reactors, contained a brief discussion of some of the safety issues associated with partial-core, reactor-grade MOX. However, the document is completely out-of-date and many of the reassuring predictions it made concerning the viability of MOX have not been borne out in practice. For instance GESMO claimed that the issues of plutonium segregation and greater fission gas release in MOX fuel would not be significant; however, today they are major stumbling blocks for the qualification of MOX fuel for high burnups. The increased fission gas release from MOX fuel elements has led the French safety authority, DSIN, to limit burnups of MOX fuel in PWRs to 33 MWd/tgHM, well below that now achieved with LEU fuel, which imposes an economic penalty on the use of MOX in France.²²

The DPEIS must include, at a bare minimum, a discussion of these issues at the same level of detail as GESMO, fully updated and with a candid discussion of the remaining uncertainties associated with MOX use in LWRs in the context of W-Pu disposition.

Relative to an LEU core, a MOX core is characterized by the following features: more negative moderator temperature and void coefficients, smaller delayed neutron fraction and prompt neutron lifetime, reduced control rod worth and greater inhomogeneities in fuel microstructure. Each one of these changes separately can have an adverse effect on safety. In addition, one can posit scenarios in which these changes interact synergistically to greatly amplify their individual effects.

The overall deleterious interaction between these elements can be understood in the following way. The decrease in reactor period associated with the smaller delayed neutron fraction and prompt neutron lifetime is perhaps the most serious issue, since this can result in a significant reduction in the time available for an operator to respond to transients. Because of the relatively small percentage of Pu-241 it contains (which has a larger delayed neutron fraction than Pu-239 and Pu-240), this problem is more severe for weapons-grade plutonium than for reactor-grade, especially at the beginning of cycle, when there is a nearly three-fold reduction in delayed neutron fraction.

For transients associated with an increase in coolant temperature (undercooling transients), such as those initiated by the loss-of-heat-sink accident (LOHA) in PWRs, this

²² A. McLachlan, "New French RIA Tests Suggest Better Resistance of High-Burnup Fuel," *Nuclear Fuel*, September 11, 1993, p. 1.

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decrease in stability may be compensated for by the greater negative temperature feedback associated with the greater magnitude of the moderator temperature coefficient.

However, because of the greater magnitude of the moderator temperature coefficient, the increase in core reactivity associated with a decrease in coolant temperature or increase in coolant density (overcooling or overpressure transients) will be more rapid for a MOX core than for an LEU core. In these events, the change in feedback behavior of a MOX core will aggravate, rather than compensate for, the reduced reactor period, so that the severity of overcooling/overpressure transients will increase. The reduced worth of control rods and soluble poisons also increases the risk that the transient will proceed without control.

The third coupled safety issue is the intrinsic inhomogeneity of MOX fuel compared to LEU. Current methods of MOX fabrication, such as the MIMAS process in use at the MELOX plant in France, produce inhomogeneities in the fuel that lead to macroscopic clumping of plutonium at the periphery of the fuel rod during irradiation.²³

This clumping phenomenon, which is very difficult to model accurately, can lead to formation of "hot spots" which can alter predictions concerning the local cladding temperature increase during reactivity insertions, such as overpressure transients in BWRs, and calculation of the departure from nucleate boiling (DNB) ratio. Additional uncertainties result from the lack of fabrication and irradiation experience with MOX fuel containing integral burnable absorbers (such as gadolinium), which would be required in MOX fuel for U.S. Ex-LWRs. The effect of gadolinium addition on the microstructure of MOX fuel both before and during irradiation is not known.

At least one of the vendor documents (the only one we have reviewed) cited indirectly by the DPEIS does not appear to address the issue of determining MOX-specific DNB ratios.²⁴ This renders its conclusions regarding the acceptability of MOX core response during transients unwarranted. This point is underscored by the fact that the DPEIS, as well as the vendor references, assume that MOX fuel burnups will be significantly higher (e.g. 43 MWd/tHM for PWRs) than those currently allowed in France.

The magnitude of the increase of overall risk of core damage and catastrophic release if MOX is substituted for LEU in an Ex-LWR is highly plant-specific, as is the relative contribution of various initiating events to core damage in LWRs. In order to get a sense of the issues involved is instructive to look at a few specific cases.

²³ A. MacLachlan, "French Working to Improve MOX Performance and Economics," *Nuclear Fuel*, November 6, 1995, p. 8.

²⁴ GE Nuclear Energy, "Study of Plutonium Disposition Using Existing GE Advanced Boiling Water Reactors," NEDO-32361, June 1, 1994.

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Comment noted. Extensive irradiation experience, including both test and commercial irradiation, has shown that the process described by the commentor produces adequate homogeneity.

The commentor's reference #23 from the November 6, 1995, *Nuclear Fuel* more accurately refers to microscopic Pu-rich regions present throughout the fuel matrix. The inhomogeneities are microscopic, and are much smaller than those that have been shown acceptable through Reactivity Insertion Accident (RIA) testing.

The accepted values for Pu particle size based on RIA testing are supported by M.D. Freshley, E.A. Aitken, D.C. Wadekamper, R.L. Johnson, and W.G. Lussie in *Nuclear Technology* 15(1972) 239 and by T. Abe, N. Nakae, K. Kodato, M. Matsumoto, and T. Inabe in *J. Nuclear Materials* 188(1992) 154.

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PWRs. Perhaps the most troubling consequence of the use of MOX in PWRs is the fact that one of the classes of events which are more severe for MOX cores than LEU cores, the overcooling transients, is also the same class which has the potential to cause one of the most dangerous and poorly understood safety phenomena associated with PWR operation, pressurized thermal shock (PTS). Failure of the reactor pressure vessel (RPV).²¹

PTS is a phenomenon in which the reactor vessel can undergo catastrophic failure if the vessel remains pressurized during (or repressurizes immediately following) a sudden and significant drop in reactor temperature. In the worst case, this event, can result in a simultaneous failure of all the barriers (the fuel cladding, the RPV itself, and the containment building) to release of radionuclides into the environment.²² Early containment failure can occur as a result of missile attack from fragments of the exploding RPV or from direct containment heating (DCH) in accident sequences in which partial melting of the fuel occurs prior to RPV failure. Such events are also associated with significant releases of low-volatile radionuclides to the environment, as discussed in the previous section; thus the substitution of MOX for LEU in Ex-LWRs can result in an increase in both the probability and the consequences of this class of accidents.

PTS transients can result directly from a large variety of initiating events, including main steam line breaks, small-break LOCAs (e.g. Three Mile Island) and steam generator tube ruptures (SGTRs).²³ Other events, such as instrumentation malfunctions or turbine trip due to loss of offsite power (LOOP), can initiate sequences resulting in PTS as well.²⁴ In many of these sequences, the time available for initiation of operator action is an important parameter.²⁵ Since the reduced response time to overcooling transients associated with the substitution of MOX for LEU increases the risk of inadequate or incorrect operator action, the risk that one of these initiating events will progress to PTS increases as well.

The susceptibility of a reactor vessel to PTS increases with irradiation time as a result of fast neutron embrittlement of the reactor vessel; the PTS risk increases sharply with reactor age. The approach used by the NRC for limiting the risk of PTS in the aging fleet of U.S. PWRs has been to restrict the extent of RPV embrittlement permissible in operating reactors before plant-specific evaluation is required. This is done by comparing

²¹ U.S. Nuclear Regulatory Commission, "Reactor Pressure Vessel Status Report," NUREG-1511, December 1994.

²² J. Collier and L. Davies, "Second Marshall Report Gives Grounds for Confidence," *Nuclear Engineering International*, May 1982, p. 30.

²³ NRC, NUREG-1511, *op cit.*, p. 4-2.

²⁴ U.S. Nuclear Regulatory Commission, "Pressurized Thermal Shock," SECY-82-465, November 1982.

²⁵ *Ibid.*, p. 6-5.

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PTS "reference temperatures" for base metal and welds, which provide a rough measure of the PTS susceptibility of the RPV with respect to the spectrum of identified overcooling transients, to "screening criteria" defined by NRC. Because of the large uncertainties characterizing initiation and progression of the PTS phenomenon, however, the actual level of risk of core damage and radionuclide release corresponding to the screening criteria, which were set in 1982 and have remained unchanged, is unclear.³⁰

The NRC concluded in 1994 that only two U.S. PWRs would exceed the PTS screening criteria before the end of operating life. However, since that time NRC has apparently lost confidence in the adequacy and completeness of data it has received from operators in support of their compliance with the PTS rule. Reasons for this include new indications of greater uncertainties in the chemical composition of welds than was previously assumed and greater sensitivity of PTS reference temperature to variability of weld composition. Also, accurate analysis of PTS risk is seriously impaired by gaps in the data supplied by operators that result from withholding of information based on proprietary considerations.³¹

Because of the large uncertainties associated with the PTS phenomenon, the baseline PTS risk of Ex-PWRs is very difficult to assess accurately. The spectrum of initiators includes events of relatively high probability, such as SGTRs (approximately 0.005 per reactor-year) and small steam line breaks (0.02 per reactor-year), which have consequences that depend strongly on operator intervention and therefore would be more likely to progress to PTS in MOX cores than in LEU cores. This suggests that the overall risk of PTS may be substantially greater in MOX cores. Therefore, the PTS screening criteria now in use are not appropriate for MOX cores and will have to be reevaluated.

BWRs: In BWRs, the PTS risk is believed to be considerably smaller than that in PWRs. However, there are BWR-specific safety issues associated with MOX use as well. Probabilistic risk assessments such as NUREG-1150 have shown that core damage in typical BWRs is dominated by station blackout events. In this category is the turbine trip without bypass event, a loss-of-heat-sink accident (LOHA) associated with overpressure transients and void collapse. This is one of the most limiting transients that can affect a BWR, and it is also one which is more severe for a MOX core, as discussed above. Thus the overall risk of core damage in BWRs will increase if MOX is substituted for LEU.

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³⁰ Comments of David Okrent in SECY-82-465, member of NRC Advisory Committee on Reactor Safeguards, October 14, 1982.

³¹ U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, NRC Generic Letter 92-01, Revision 1, Supplement 1: Reactor Vessel Structural Integrity, May 19, 1995.

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iii) *The role of economics in safety assessment*

An accurate assessment of the PTS risk associated with MOX use in Ex-PWRs is also closely related to reactor-specific economic issues, which are not addressed in the DPEIS. For instance, the risk may be reduced by annealing the reactor vessel, a procedure that is not anticipated to be very costly (about \$20 million) but which nonetheless has been resisted to date by the PWRs identified as being of greatest PTS risk, such as the Palisades plant in Michigan. If DOE decides that the PTS risk should be mitigated by annealing the RPVs of Ex-PWRs chosen for Pu disposition, both the cost and the associated worker radiation exposure will probably have to be borne by the disposition program.

The degradation of steam generators (SG) in PWRs raises a similar issue. Some of the utilities which have responded to DOE's solicitation of Expressions of Interest have offered the use of PWRs which are known to be operating with severely degraded steam generators (Kewaunee). The operator of Kewaunee has opposed steam generator replacement (at a cost of approximately \$100 million) on economic grounds. However, given the large contribution of SGTR events to overheating and PTS transients, it would be unwise to pursue MOX disposition in these reactors without SG replacements. Again, the cost would probably have to be charged to disposition, since plants like Kewaunee are determined not to replace their steam generators. Charging the occupational exposure of SG replacement, typically about 150 person-rem, would increase the total incremental occupational exposure associated with the Ex-LWR MOX option of 27.2 person-rem per reactor listed in the DPEIS (Vol. II, Table 4.3.5.2.9-2, p. 4-690) by a factor of greater than five.

Another area in which safety and economics interact concerns the allowable MOX fuel burnup. Utilities are going to expect to be compensated for MOX-related issues that impair the reactor performance. Restriction of MOX burnups to well below LWR burnups, as is the case now in France, will have economic consequences and affect the cost of the MOX option. The calculus that will be used to balance the safety issues associated with high MOX burnups and the economic penalty is not addressed in the DPEIS.

3. *Conclusions*

The DPEIS does not contain sufficient information to consistently compare the occupational and public health and safety impacts of the immobilization and MOX options. To correct this problem, the final version should include:

- A full evaluation of the incremental health and safety impacts of the can-in-canister (CIC) immobilization options, both for routine operation and for accident conditions.
- A full evaluation of the incremental health and safety accident impacts of the existing LWR and CANDU MOX option, taking into account the specific properties of full-core,

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Comment noted. DOE is not proposing this mitigation at this stage. Should the Existing Reactor Alternative be selected in the ROD, and this mitigation be determined to be necessary, such costs and exposures will be evaluated in subsequent tiered NEPA analyses, and cost studies as appropriate.

The costs for operating life extensions (for example, steam generator replacements) would be borne by the reactor owner. Such actions would likely require their license review and related environmental analysis. Contract negotiations for the utilization of the MOX fuel for Pu disposition would be competitive between reactor owners, and DOE and would consider related technical, cost, and environmental issues.

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Comment Number 68

Comment noted.

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weapons-grade MOX fuel and potential differences in the probabilities and consequences of accidents relative to LEU fuel, as well as specific issues (e.g. pressure vessel embrittlement) pertaining to the physical condition and operating history of existing reactors which are candidates for the program.

- A revision of the accident impact analysis of the evolutionary LWR option, taking into account the specifics of MOX fuel as described above, and using a more realistic source term for loss-of-containment accidents.

In all parts of the analysis, outstanding uncertainties should be clearly identified and their magnitudes estimated.

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Marvin S. Fertel
NEI President
Nuclear Economics &
Fuel Supply

May 7, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
c/o SAIC-PEIS
P.O. Box 23786
Washington, D.C. 20026-3786

SUBJECT: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement
(DOE/EIS-0229-D)

The Nuclear Energy Institute¹ (NEI) appreciates the opportunity to comment on the Department of Energy's (DOE) Draft Programmatic Environmental Impact Statement (PEIS) for the Storage and Disposition of Weapons-Usable Fissile Materials (DOE/EIS-0229-D). NEI supports the efforts of DOE in identifying appropriate actions for the storage of all weapons-usable fissile materials and for the disposition of weapons-usable fissile material declared surplus to national defense needs. NEI encourages DOE to pursue those actions necessary to ensure that these weapons-usable materials are in a safe, controlled, and inspectable storage condition as soon as possible. Given the importance of implementing safe, efficient, and economical actions to dispose expeditiously of surplus weapons-usable fissile materials, we encourage DOE to rely to the greatest extent possible on the technical analysis and recommendations of the National Academy of Sciences as outlined in its 1994 publication, *Management and Disposition of Excess Weapons Plutonium*. By taking appropriate actions in a timely manner, the United States

¹ The Nuclear Energy Institute is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. NEI's purpose is to foster and encourage the continued safe utilization and development of nuclear energy to meet the nation's energy, environmental and economic goals. NEI represents over 250 companies and organizations worldwide, including electric utilities that own and operate nuclear power plants, nuclear plant equipment suppliers, engineering/construction firms, nuclear fuel cycle companies, and others in the nuclear energy industry.

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can lead by example in eliminating what NAS called "a clear and present danger to national and international security."

In response to the requirements of the National Environmental Policy Act of 1969, as amended, this draft PEIS analyzes various long-term storage and disposition alternatives. For the disposition of surplus plutonium, nine action alternatives are identified and categorized as either deep borehole burial, immobilization of plutonium for disposal, or burn in reactors as mixed-oxide (MOX) fuel. NEI agrees with DOE in pursuing the "spent fuel standard" as the most appropriate standard for managing the risks associated with surplus weapons-grade plutonium. As NAS states "...none of the options for long-term disposition of excess weapons plutonium can be expected to substantially reduce the inventories of excess plutonium from nuclear weapons for a least a decade." Therefore, we urge you to concentrate your resources on alternatives that will bring results in the shortest timeframe possible at reasonable cost.

NEI cautions against the utilization of ICRP and NCRP models to attempt to estimate actual impacts of low levels of radiation exposure to the public and workers. These models were developed to be conservative and to accommodate uncertainties in knowledge of the health impacts at low radiation exposures. The proper use of these models is to assess potential risks associated with one policy option relative to other options, and as a result, to make informed risk management decisions.

NEI recognizes that more than one option for the disposition of excess-weapons plutonium will be needed to adequately address all surplus weapons-usable material. As DOE acknowledges, existing surplus plutonium comes in various forms, and some of these forms may not be suitable for conversion to MOX fuel. Therefore, the strategy for disposition of surplus weapons-usable plutonium may involve a combination of disposition alternatives. NEI supports the findings of NAS indicating that the two most promising alternatives for the purpose of meeting the spent fuel standard are the use of surplus plutonium as MOX fuel and the vitrification option.

NEI supports the disposition of surplus plutonium as MOX fuel in commercial reactors as the most viable method of attaining the spent fuel standard and therefore, significantly reducing the security risks of this weapons-usable material. Disposal of plutonium using the "MOX option" can be accomplished in a timely manner and lies within the bounds of existing technology. DOE must be aware, however, that the final decision to burn surplus weapons plutonium in commercial reactors rests with individual electric utility companies and as such, a predictable and reliable schedule for fuel supply will be critical to their decision-making process.

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Comment Number 1

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Comment noted.

Comment Number 2

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The human health effects response to low-level radiation exposure is still disputed in the scientific community. The International Commission of Radiological Protection (ICRP) and NCRP, two widely respected and accepted scientific organizations, support using the linear-non-threshold approach for estimating human health risks for low-level radiation exposure. Some suggest that this estimation is too conservative while others believe that radiation effects would be greater at low-level radiation exposures. However, the ICRP and NCRP approach is the most widely used method to estimate the radiation health risk and has long been employed by regulatory agencies in the United States. It was appropriate to use this method in the PEIS.

Comment Number 3

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The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

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May 7, 1996
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DOE must resolve a number of institutional issues, including the fact that the United States does not have a facility to fabricate MOX fuel, before it can expect reasonable participation from these companies. If MOX fuel is to be manufactured in the United States, reactor burning of weapons-usable plutonium will not begin for an additional five to ten years, which will be needed to build and license a MOX fabrication facility. The option of using excess European capacity to fabricate MOX fuel is not included in the draft PEIS, but may well be the most expeditious method of disposing of this material and should be evaluated as part of the PEIS.

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As stated previously, before any company will agree to burn weapons-usable plutonium in its reactors, it will require a firm commitment from the federal government that the material would be delivered as and when promised. Security of fuel supply is of utmost importance to electric utilities and without it, DOE cannot expect long-term utility participation in obtaining these all important national security goals.

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In closing, we wish to reiterate that the United States has an opportunity to demonstrate leadership to the rest of the world by implementing actions that will result in the near term disposal of surplus weapons plutonium. The world has accepted the validity of the spent fuel standard as a fully adequate non-proliferation deterrent. Aggressive implementation by the United States of the MOX and vitrification options to achieve the spent fuel standard and to dispose of surplus weapons-usable plutonium should be pursued expeditiously and achieved as soon as possible. Since there will be significant licensing and regulatory issues associated with the successful implementation of the MOX fuel option, we encourage DOE to develop an approach that maximizes industry involvement.

6/01.06.00

Thank you for the opportunity to comment and we look forward to our continued participation in this activity.

Sincerely,

Marvin S. Fertel

Marvin S. Fertel

7/06.06.08

01 00 00 Comment Number 4

The use of European MOX fuel fabrication is an option analyzed under the Existing LWR Alternative (see Section 2.1.4, under the Reactor Category).

13 00 00 Comment Number 5

Comment noted.

01 06 00 Comment Number 6

Comment noted.

06 06 08 Comment Number 7

Comment noted. If the Reactor Alternative using MOX fuel is selected, negotiations with the appropriate reactor owners would include commitments for MOX fuel supply.

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Nuclear Information and Resource Service

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June 6, 1996

Greg Rudy, Acting Director
Office of Fissile Materials Deposition
U.S. Department of Energy
1000 Independence Avenue NW
Washington, DC 20585

Comment with regard to: Storage and Disposition of Weapons Usable Fissile Materials Draft
Programmatic Environmental Impact Statement

Dear Mr. Rudy,

We are writing to supplement two other sets of comments to which Nuclear Information and Resource Service is a signatory. We would like to emphasize our support for the recall of the Draft Programmatic Environmental Statement on the grounds that it does not fairly or adequately assess all the options or impacts of the options given, and thus does not fulfill NEPA requirements. The purpose of these comments is to register areas that should be omitted and other areas that should be included in the revised Draft PEIS that considers the impact of mixed oxide fuel (MOX).

We wish to assert here that the MOX fuel option should be excluded from any consideration whatsoever. National nuclear policy should reflect the goals of the citizens of the United States. It is clear that the majority of American taxpayers do not support further nuclear development and do not support their tax dollars being used to subsidize an economically non-competitive, polluting, dangerous industry that is in part responsible for creating the very problem that the PEIS is designed to try and resolve. MOX fuel is not a "solution" to anything.

At a time when the national policy move towards deregulation and down-sizing should be allowing market forces for the first time to affect the profile of electric utility service, the creation of a MOX Fuel program would be a form of protectionism that would shield some utilities from some of the forces of competition. We are not necessarily advocating utility deregulation, but pointing out that this would constitute federal intervention on behalf of nuclear waste generators.

In addition, the "policy signal" sent to utilities would be a federally-approved open door for programs to extend MOX fuel use, including reprocessing, pyroprocessing, breeder type reactors and ultimately the need for a vastly expanded radioactive waste program to handle both so-called "low-level" and high-level wastes—not to mention the health consequences in increased medical

1/08.03.01

2/08.03.01

3/01.04.00

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08 03 01 Comment Number 1

Comment noted.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentator's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 04 00 Comment Number 3

The specific purpose of DOE's PEIS effort is to evaluate alternatives for the disposition of surplus weapons-usable Pu that would render the Pu as inaccessible and unattractive for reuse in nuclear weapons as the much larger and growing quantity of Pu that exists in spent nuclear fuel from commercial power reactors. This condition is referred to as the Spent Fuel Standard. If an alternative using MOX fuel in reactors is selected, the surplus Pu would eventually be contained in spent fuel and, by definition, the Spent Fuel Standard would be achieved.

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, reprocessing and extraction of Pu from that spent fuel is not being proposed, and is beyond the fundamental nonproliferation purpose of the disposition effort. The PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not propose reprocessing of the spent fuel, breeder reactors, or other potential programs involving MOX fuel. Nor does the PEIS prejudice future decisions regarding the management or disposition of the spent fuel.

NUCLEAR INFORMATION AND RESOURCE SERVICE,
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costs due to continued disposal of hazardous agents in areas of population, food production and water sources.	3/01.04.00 cont.	
We call upon the Department to recognize that this set of eventualities has been again and again reported by affected communities, national environmental and public interest organizations, and Congress. It is time that the Department invest its considerable expertise in figuring out how to devote more of its own budget to the development and deployment of non-nuclear energy options and the consideration of the non-reactor options for plutonium and other fissile materials.	4/01.04.00	
Without dropping our above stated contentions, we also note a number of specific problems in the Draft PEIS that makes it untenable even on its own, misguided terms.		
The analysis must include the impact of the use of MOX fuel on implementation of the "Low-Level" Radioactive Waste Policy Act. Very specific projections of probable waste streams have been made for the projected disposal facilities, which could be drastically altered with MOX fuel use. The impact analysis must include an assessment of impact on groundwater since very persistent radionuclides are allowed in civilian shallow land burial and other relatively unconfined facilities. To what extent will use of MOX fuel add long-lived radionuclides and/or highly radioactive materials to commercial "low-level" waste sites? This should include a discussion of all sources of radiation affected by use of MOX fuel, including reprocessing, fuel fabrication, enrichment, and any other facilities. There should also be an assessment of the impact on the Department itself since the civilian "low-level" sites are to be ceded over to the Department after closure. Increases in the persistent radionuclide inventory could affect the liability issues associated with such sites, and issues such as the possibility of inadvertent criticality must be included.	5/09.11.08 6/09.04.08 5/09.11.08 cont.	
Similarly, it is imperative that the PEIS include a full analysis of the relative impacts of MOX fuel on all aspects of irradiated fuel management and disposition. This must include impacts of thermal loading on the fuel pool, dry cask storage, dry cask transport, and repository emplacement. In addition, all accident scenarios associated with fuel pools, cask loading and unloading, storage, transport and handling must be assessed for increased relative impacts, but also confounding factors that MOX fuel presents, particularly in the area of criticality and/or increased burn-up. (E.g. rate of hydrolysis of water moisture in an unevacuated dry cask and potential for hydrogen gas build-up and ignition.)	7/06.01.08	
The nature of a Programmatic Environmental Impact Statement is intended to encompass complex interlocking factors. A decision to supply existing utilities with a fuel source and subsidy has a number of economic and social consequences. As noted above, such a move by the Department is a "policy signal" to open the way for further modernization of the U.S. at a time when this is contrary to the will of the people. If this PEIS is going to include the option of MOX fuel, then there needs to be a full-blown, detailed assessment of the future impact on society from nuclear power expansion, particularly technologies using MOX fuel.	8/06.01.08	
Finally, with regard to the basis for assessing radiological impacts, the assessment given is inadequate. We reference a growing body of literature and data that substantiates that there is	9/09.09.08	
		M-282

01 04 00 Comment Number 4

Comment noted.

09 11 08 Comment Number 5

The design of the MOX fuel fabrication facility is conceptual at this time and, therefore, estimates of LLW by radionuclide content and concentration would be speculative. The conceptual designs for the disposition facilities have, as part of their design, waste management facilities that would treat and package all waste generated into forms that enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State regulations and DOE Orders. As the designs mature, process waste assessments, which include individual waste streams characterization, will be completed. All waste streams generated would be treated and packaged into a form that enables long-term storage and/or disposal.

09 04 08 Comment Number 6

The analyses presented in Chapter 4 include potential impacts to groundwater quality and groundwater availability.

06 01 08 Comment Number 7

Depending on the fuel design and reactor irradiation campaign selected, there could be differences between the behavior of the individual MOX fuel assemblies and the LEU fuel assemblies. If modifications to reactor systems are required, the modifications would be implemented as necessary to ensure comparable system performance between MOX fuel and LEU fuel.

Since issues such as accident scenarios associated with fuel pools, cask loading and unloading, and storage and transport are facility design-specific (for example, BWR or PWR, different capacity, different reactor suppliers), the discussions on such issues are beyond the scope of this PEIS. However, if this Reactor Alternative is selected, such issues will be analyzed in tiered NEPA documents, SARs, and other licensing documents.

NUCLEAR INFORMATION AND RESOURCE SERVICE,
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radiological hazard and impact from low doses of radiation (*). We challenge the assertion that hormesis effects cannot be ruled out. Even if there is variability in human response to radiation exposure, it is completely inappropriate for a federal agency to support any policy that would selectively favor those individuals with a higher tolerance to radiation at the sacrifice of the rest of the population. It is absolutely required that radiological impact be assessed with regard to those who are most vulnerable in any population. Evidence of elevated effects of low-dose radiation lead us to challenge the assertion made in the draft PEIS that assuming a single point source at a specified number of feet is more conservative than doses from ongoing internal exposure.

We are calling upon you to be the leaders towards a sustainable future: avoid the long costly process of discovering too late that your "solution" only made the problem worse.

Sincerely,



Mary Olson
Nuclear Information & Resource Service
Radioactive Waste Project

* Partial list of references substantiating detrimental health effects from low doses of ionizing radiation. We submit these references and by associating the text of these documents as part of our official comment of record.

BEIR V. Health Effects of Exposure to Low-Levels of Ionizing Radiation, National Academy Press, 1990.

Gardner, et al, 1990, "Results of Case-Control Study of Leukemia and Lymphomas Among Young People Near Sellafield Nuclear Plant in West Cumbria," BMJ, Vol 300, 17 February, 1990.

Gelfand, John, 1990, "Radiation-Induced Cancer from Low-Dose Exposure: An Independent Analysis," C.N.R. Book Division, San Francisco.

Morris, M. and R. Knorr, 1990, "The Southeast Massachusetts Health Study 1978-1986," Report of the Massachusetts Department of Public Health, October 1990.

Wing, Stephen, et al, Mortality Among Workers at Oak Ridge National Laboratory," Journal of the American Medical Association, March 20, 1991-Vol. 265, No. 11 pp.1397-1402.

9/09.09.08
cont.

10/01.02.00

06 01 08 Comment Number 8

Comment noted.

09 09 08 Comment Number 9

The human health effects response to low-level radiation exposure is still disputed in the scientific community. The ICRP and NCRP, two widely respected and accepted scientific organizations, support using the linear-non-threshold approach for estimating human health risks for low-level radiation exposure. Some suggest that this estimation is too conservative while others believe that radiation effects would be greater at low-level radiation exposures. However, the ICRP and NCRP approach is the most widely used method to estimate the radiation health risk and has long been employed by regulatory agencies in the United States. It is appropriate to use this method in the PEIS.

01 02 00 Comment Number 10

Comment noted. The BEIR V and *Journal of the American Medical Association* references were used in preparing this PEIS. The commenters' other listed references were not considered because they were not specific to a particular site being considered for any alternative, nor generally recognized authoritative references like the BEIR V.

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O'NEILL, JOHN E., MADISON, IN
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U.S. Dept. of Energy Office of Fissile Materials Disposition P.O. Box 23786 Washington, D.C. 20266-3786 10-29-95	REGARDING: (a) Ltr. 10-19-95, Disposition of Surplus Highly Enriched Uranium EIS (HEU EIS) COMMENT: EIS (HEU EIS) Regardless of the alternatives for disposition, storage will be required. In view of the Environmental opposition to locations, I wonder: Has former U. S. Army above ground storage areas been considered? Former Army Depot, Igloo S.D. had 801 above ground, isolated storage igloos with few people and large buffer zones. (b) Fact Sheet, 10-17-95, Reading Room Locations. Storage and Disposition of Weapons-Usable Fissile Materials Programmatic EIS (PEIS) COMMENT: EIS (PEIS) Same as above.---Has former U.S. Army above ground storage areas been considered? (c) Newsletter, Fall 1995, Vol 1, Management of Nuclear Weapons Materials, Management and Disposition of Excess Weapons Plutonium (a report) COMMENT: Newsletter (Excess Plutonium) Madison Indiana has a large electric power plant (Indiana Kentucky Electric (IKE) that is producing power for Plutonium manufacture at Portsmouth Ohio. Would you comment on the future need for the electric energy?	1/01.04.00
John E. O'Neill 1713 Oak Hill Dr. Madison, IN 47250 PH: 812-273-1600 Sincerely, <i>John E. O'Neill</i>	2/15.00.00	M-002

01 04 00 Comment Number 1

The Manzano Mountain Site was considered in the Final PEIS for pit storage and Appendix P was added. Other non-DOE sites (for example, aboveground military sites) were considered in the Screening Report and were eliminated because of cost effectiveness, ES&H, and public/institutional acceptance concerns, with no overriding advantages compared to existing DOE sites already safeguarding nuclear materials.

15 00 00 Comment Number 2

This comment is beyond the scope of the PEIS. Planning for use of the electric energy is the responsibility of the generating utility company.

OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, OAK RIDGE, TN,
RALPH HUTCHISON
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7 June 1996

DOE-Office of Fissile Materials Disposition
P O Box 23786
Washington, DC 20026-3786

To whom it may concern:

Enclosed please find the comments of the Oak Ridge Environmental Peace Alliance regarding the Storage and Disposition PEIS. You will note that our comments are intended to identify areas of profound weakness in the current PEIS so that DOE can prepare a more adequate PEIS when redrafting the document as has been called for by a broad national coalition of groups concerned with fissile materials storage and disposition.

Thank you for your attention to our concerns.

Sincerely,

Ralph Hutchison

Ralph Hutchison, coordinator
Oak Ridge Environmental Peace Alliance

100 Tides Rd, Suite 4A
phone: 423 483 8202

Oak Ridge, TN 37830
fax: 423 483 9725

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OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, OAK RIDGE, TN,
RALPH HUTCHISON
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Comments on the
Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Oak Ridge Environmental Peace Alliance
May 7, 1996

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OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, OAK RIDGE, TN,
RALPH HUTCHISON
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01 00 00 Comment Number 1

Each of these documents is analyzed based on separate and distinct purposes and needs, and was determined by DOE not to be connected. Decisions related to each of these documents can be made independently without prejudicing the other decisions. Coordination of these analyses and decisions with each of the related DOE Programs is an integrated and ongoing process.

Disposition of HEU is the subject of a separate document, the HEU EIS. As stated in the HEU CRD on page 3-161, if more than 200 t (220 tons) of HEU is eventually declared surplus, additional NEPA analysis will probably be necessary, but DOE believes it has adequately bounded the surplus material for the foreseeable future.

Introduction

The Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement (Storage and Disposition PEIS) continues the Department of Energy's preeminent approach to making decisions regarding the storage, processing and disposition of weapons-usable fissile materials. The Storage and Disposition PEIS addresses the long-term storage of highly enriched uranium and plutonium and further discusses disposition of plutonium but does not address the disposition of strategic highly enriched uranium.

The Department of Energy, faced with the need to make decisions about what to do with weapons-usable fissile materials, has now produced at least eight NEPA documents which look at pieces of the Department's challenge but are neither coherent nor comprehensive taken in their entirety. The Department's refusal to adopt a comprehensive and coherent NEPA strategy, as requested by grassroots citizens groups in a meeting with the Secretary of Energy in January of 1994, has led us to the current situation. It is even clearer now than it was in January, 1994, that the most responsible and efficient approach to making decisions regarding fissile materials would have been a comprehensive, integrated, coherent approach.

Instead the Department has prepared, is preparing, or has committed to prepare:

- an Environmental Assessment on the interim storage of plutonium pits at the Pantex Plant in Amarillo, Texas
- an Environmental Assessment on the interim storage of highly enriched uranium at the Y-12 Plant in Oak Ridge, Tennessee
- an Environmental Assessment on the downblending of highly enriched uranium purchased from the republic of Kazakhstan
- a Site-wide Environmental Impact Statement for the Pantex Plant in Amarillo, Texas
- an Environmental Impact Statement on the disposition of surplus highly enriched uranium
- a Site-wide Environmental Impact Statement for the Y-12 Plant in Oak Ridge, Tennessee
- a Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons-Usable Fissile Materials
- a Programmatic Environmental Impact Statement on the stewardship and management of weapons and strategic weapons materials in the US stockpile

Even this coverage is not exhaustive; the Department of Energy has not yet prepared NEPA analysis for the disposition of highly enriched uranium which is currently considered strategic (with the exception of approximately 35 metric tons included in the

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surplus highly enriched uranium (HEU) which has not yet been officially declared surplus), necessitating at some time in the future the preparation of yet another NEPA document. The Department should, in this *Programmatic EIS*, discuss the disposition of highly enriched uranium as thoroughly as it does plutonium, considering the reasonable alternatives (which are fewer and more manageable) and avoiding the necessity of yet another environmental analysis when the next 30 metric tons of highly enriched uranium is declared surplus.

1/01.00.00
cont.

Overriding concerns of the Oak Ridge Environmental Peace Alliance

The Oak Ridge Environmental Peace Alliance believes that the current draft PEIS for the storage and disposition of weapons-usable fissile materials is fundamentally deficient and should be withdrawn, redrafted and resubmitted for comment when the Department has been able to address the concerns identified by the public.

The specific comments we offer here relate primarily to deficiencies in the current draft's consideration of the long-term storage of highly enriched uranium. They indicate areas in which the Department must either improve the rigor and quality of the PEIS, fill in gaps, or modify the PEIS to meet the minimum requirements of NEPA before it is resubmitted.

2/08.03.01

The disappeared years

In discussing the long-term storage of highly enriched uranium at Oak Ridge's Y-12 Plant, which is for economic, security and safety reasons the Department's only reasonable option, the draft PEIS relies heavily on the Environmental Assessment for the Interim Storage of highly enriched uranium at Y-12, prepared by DOE in 1994. The Interim Storage EA, prepared in 1994, considered storage of highly enriched uranium at Y-12 for up to 10 years. This means DOE has NEPA coverage for the storage of highly enriched uranium until 2004.

In assessing the need for upgrades to the Y-12 facility, the PEIS relies on a data report, *Upgrading the Y-12 Plant for Long-Term HEU Storage*, which states "The long-term storage mission is assumed to begin in the year 2020, continuing for at least 50 years." (Y/EIS-043R2, p. 2, §1.4T)

Assuming that DOE plans to conduct highly enriched uranium operations at the Y-12 Plant during the sixteen years between 2004 and 2020, NEPA coverage must be provided. Since NEPA coverage on storage of highly enriched uranium expires in 2004, DOE must address long-term storage beginning in 2004, not 2020, at the Y-12 Plant.

3/08.00.00

Length of long-term storage

In the HEU EIS currently in preparation, DOE analyzes the environmental impact of the disposition of 200 metric tons of surplus HEU. Of this 200 metric tons, one hundred sixty-five metric tons have already been declared surplus by the President. This gives DOE a 35 metric ton "buffer" to cover HEU which may be declared surplus in the future.

Beyond this 35 metric tons, DOE has no NEPA analysis addressing the disposition of HEU which is currently considered strategic but which will, at some time in the future, be declared surplus. Absent such analysis, and absent the plan for such analysis, DOE has

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08 03 01 Comment Number 2

As noted in presentations at the public meetings, DOE welcomes public input throughout the decisionmaking process, which includes the formal NEPA comment periods, scoping, and reviewing the Draft PEIS, as well as during the period of time after issuance of the Final PEIS leading up to the ROD. DOE believes that the Draft PEIS was adequate, and does not intend to issue another draft.

08 00 00 Comment Number 3

This PEIS analyzes the environmental impacts of long-term storage of HEU for a period of up to 50 years. The document uses a planning date of 2005 as the year in which all of the HEU would be in place at a selected site. The environmental analysis in this document, plus any tiered documents, will provide the "coverage" required for long-term storage to the year 2055.

no rationale for limiting its consideration of "long-term" HEU storage to fifty years. The number fifty has been selected arbitrarily and is not anchored to any point in reality—not the design life of buildings, not the expectation of completion of disposition, not a schedule of international disarmament, not the physical properties or the hazard-life of the materials being analyzed. Analysis for fifty years is neither adequate nor appropriate. The half-lives of these materials indicate they will still be as dangerous in fifty years as they are today. The absence of a disposition plan and uneasiness indicates these material will, in fifty years, be sitting where they are placed as a result of decisions made in this Storage and Disposition PEIS. It makes far more sense, and is more honest to the communities which are being asked to host these materials, for the Department to look truly long-term—perhaps up to 500 years—and to establish review periods at 10 year intervals. Unless DOE can provide some assurance, or even reasonably suggest, that Y-12 will not store HEU past the year 2064, the Storage and Disposition PEIS must analyze longer storage scenarios as reasonable alternatives in the "long-term storage" section of the PEIS.	01 04 00 Comment Number 4 Fifty years was used as the timeframe for long-term storage for the environmental analysis because it is a reasonable facility lifecycle. To increase this to 100 years or more would lead to a highly speculative environmental analysis, which would be contrary to the intent of NEPA. For disposition of surplus Pu, to meet the Nation's goals in support of its nonproliferation policies, DOE determined that "clear and present danger" demands that disposition be initiated promptly.
4/01.04.00	11 00 05 Comment Number 5 This PEIS analyzes the long-term storage of non-surplus HEU, and the surplus HEU that cannot go from current storage to disposition within 10 years (the time limit for the <i>Environmental Assessment for the Proposed Interim Storage of Enriched Uranium Above the Maximum Historical Level at the Y-12 Plant, Oak Ridge, Tennessee</i> [Y-12 EA]). It does not rely on the analysis in the Y-12 EA beyond 10 years.
5/11.00.05	02 05 05 Comment Number 6 Comment noted. The Final PEIS includes a description of the upgrades that would be made to facilities at Y-12 to accommodate the long-term storage of HEU (Section 2.3.1 and Figure 2.3.1-9).
6/02.05.05	02 05 05 Comment Number 6 Comment noted. The Final PEIS includes a description of the upgrades that would be made to facilities at Y-12 to accommodate the long-term storage of HEU (Section 2.3.1 and Figure 2.3.1-9).

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Structural integrity of buildings

The buildings currently employed for the storage and processing of highly enriched uranium have, with one exception, exceeded their design life. DOE's own Safety Survey indicates that seven of the eight highly enriched uranium buildings would sustain significant damage or be destroyed in a design-basis earthquake (see Appendix A). The University of North Carolina in Chapel Hill published a study in 1994 which noted the East Tennessee Seismic Zone (includes Y-12) is the second highest region of seismic activity in the nation. The study also concludes that the regular activity current in the region suggests that a high activity event is likely in the future.⁶ In conducting a study on the necessity of upgrades to make old buildings meet new standards, Y-12 employees noted that "Since 1970, the seismic demand for the Oak Ridge sites has generally increased as new seismic data became available." Taken together, these three studies demonstrate that the Department of Energy, the public, and workers at Y-12 can not rely on the current facilities to meet the goal of safe, secure storage. The collapse of a highly enriched uranium building would violate DOE's own requirement that material be stored in reliable buildings (DOE Order 5480.2R⁷); it would also mean loss of workers lives, loss of material accountability, an environmental disaster, and a cleanup challenge heretofore unaccomplished.

In addition, most current highly enriched uranium processing and storage takes place in above-ground, unreinforced facilities constructed rapidly during the Manhattan Project of hollow clay tile. These facilities are particularly vulnerable to attack by hostile parties. The air space above the Y-12 plant is not restricted. The proximity of Y-12 to uncontrolled public areas offers ample opportunity for hostile attacks; from the standpoint of protection from terrorists, the facilities do not meet the minimum safeguard standards.

The facilities were also not designed for their current mission. Activities currently take place in eight buildings scattered among the dozens of buildings at Y-12 and material stored among the buildings in a modified bread delivery truck in a crazy-quilt of activity. Safety, security, and material accountability would all be strengthened if highly enriched uranium activities took place in a single facility explicitly designed for the mission it is required to perform.

In an effort to minimize the appearance of risk from natural phenomena, DOE has adopted the classification of the Nuclear Regulatory Commission and designated the Y-12 facilities "moderate hazard" facilities. This designation relaxes the requirements for resistance to tornadoes and earthquakes; it shifts the focus of building performance assessments on safety issues only and avoids addressing environmental risks and material control and accountability requirements. This approach is outlined in DOE's March, 1992, White Paper on the Hollow Clay Tile Program which states in bold print: "Some of the existing moderate-use buildings may not meet the performance goals established by UCRS-15910, even after the contribution of inflated HCTWs is fully utilized. Therefore, an approach was developed, not necessarily to bring these buildings into full compliance with the newer requirements, but to demonstrate or establish adequacy from a safety point of view."⁸

The Oak Ridge Environmental Peace Alliance does not agree that facilities storing the nation's highly enriched uranium should only be required to meet the standards of "moderate hazard facilities" or that safety is the only performance standard to be met. Highly enriched uranium is not reactor fuel, it is weapons-usable material. When stored

02 05 05 Comment Number 7

The Y-12 EA and CRD, which are incorporated by reference, reference recent studies which provide the basis for determining the adequacy of the structural (seismic) integrity of the related Y-12 buildings and the appropriate hazard classification. The seismic study by C. A. Powell of the University of North Carolina was included as a cited reference in the Y-12 EA. Various studies have offered hypotheses regarding faulting in the eastern Tennessee seismic zone. However, there is uncertainty with respect to the faulting hypotheses and any conclusions regarding a large potential for future earthquakes compared with the historical record.

Under both No Action and the Upgrade Alternative for this PEIS, the Y-12 storage facilities would undergo the capital improvements to ensure that all HEU storage criteria are met including seismic criteria, as appropriate. The Final PEIS includes a description of the upgrades that would be made to facilities at Y-12 to accommodate the long-term storage of HEU (Section 2.3.1 and Figure 2.3.1-9) under the Upgrade Alternative (Preferred Alternative).

01 06 00 Comment Number 8

Should the Upgrade or No Action Alternative be selected in the ROD, implementation would include considerations to assure that all safeguards and security requirements have been met.

15 00 00 Comment Number 9

Comment noted.

08 03 01 Comment Number 10

The HEU materials for long-term storage will meet the criteria for safe storage (50 years) of HEU, similar to those for safe storage of Pu. The criteria for HEU is under development. The Y-12 facilities at ORR could be modified (including new construction) to ensure safe and secure storage of HEU, and would be supported by appropriate environmental analyses.

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in the quantities planned for Oak Ridge, an earthquake or tornado exceeding the moderate hazard standard (either is fairly likely over the next fifty years) which results in the destruction of an HEBU building will create profound environmental devastation and extreme worker safety risks. The destruction of an HEBU processing facility in a tornado might well result in the release of HEBU particulates in air which would pose unacceptable hazards to the off-site population and environment as well. The facilities in which the nation's highly enriched uranium is processed and stored must meet the most stringent structural standards in the world; anything less is unacceptable. The loss of control and accountability, release to the environment, exposure to workers and potential for exposure to the public which would result from building collapse in a tornado or earthquake may simply not be allowed to happen.

Transparency, international verification and control

The nonproliferation policy goals of the United States of America play a key role in driving the Storage and Disposition PEIS. Included in our nonproliferation policy is a commitment by the President of the United States to "Submit US fissile material no longer needed for our deterrent to inspection by the International Atomic Energy Agency)." The decisions made in the Storage and Disposition PEIS must support the US nonproliferation policy goals and, ideally, would advance those goals.

In fifty years, if the current US policy goals on nonproliferation are achieved, the vast majority (if not all) of US fissile materials will be under international control. Handling, processing, and storage will require complete transparency. This is not possible in the facilities currently being considered for long-term storage without significant and dramatic modifications. In fifty years, if the US policy on nonproliferation is in effect, fissile materials will be safeguarded while in storage and during processing. This is not possible in the facilities at Y-12 currently being considered in the Storage and Disposition PEIS for long-term storage.

The PEIS Data Report [VIES-04/02] which DOE relies upon to assess the upgrades required at Y-12 dismissed the possibility of international verification from the outset and ignores transparency as a goal. The Data Report states, p.2: "...this long-term storage mission does not consider any need for an HEBU inventory held under International Atomic Energy Agency (IAEA) safeguards. Therefore, this report does not include any international inspection facilities."

On page 11 the same report lists the criteria which must be met in order to achieve programmatic requirements as "Full ES&H compliance, security, capability, capacity." No mention is made of transparency, nor is there any indication that the Data Report on upgrades considered the possible need for transparency at any time. Achievement of US nonproliferation policy goals will require transparency at weapons-material sites in the US as well as in other countries. This requirement must be accommodated in the plan for long-term storage; it should be a priority.

The Y-12 Data Report also presumes that the Y-12 Plant will be a "multimission" site in the year 2030 and beyond, combining a weapons production-quality assurance program with dismantlement and storage operations (p.9). The Data Report indicates these operations will take place along side one another in the same building. This is a scenario which contradicts the international treaty on the Nonproliferation of nuclear weapons (NPT), which commits the US to the pursuit of nuclear disarmament. This scenario also makes international inspection and verification virtually impossible.

01 06 00 Comment Number 11

The United States will meet all international safeguard requirements, and, over time, make all unclassified weapons-usable fissile materials available for IAEA inspections while in storage and during processing if the material is surplus and subject to disposition. Where new facilities are required, they will be built to provide such requirements. To the extent that existing facilities are used at Y-12 or elsewhere in the DOE complex, they will be upgraded to accommodate international safeguards and inspection requirements.

01 06 00 Comment Number 12

All of the facilities and processes required for long-term storage of unclassified fissile materials and disposition of those materials declared surplus, will be designed to meet all international safeguards requirements and accommodate IAEA inspections and related transparency requirements. Classified materials will not be made available for IAEA inspections, nor will any transparency measures be implemented. However, development of technology is underway that may allow classified materials to be inspected to verify the presence and quantity of the material without divulging the classified information. If successfully developed, this technology may be implemented in the future.

01 06 00 Comment Number 13

The Storage and Disposition PEIS and the Stockpile Stewardship and Management PEIS evaluate various missions for the Y-12 site at ORR. Potential activities to be conducted at Y-12 include dismantlement of weapons components, materials storage, and materials disposition. Although the United States is reducing its weapons stockpile, it is also maintaining a portion of that stockpile and supporting operations needed to provide that maintenance capability. These activities are all consistent with domestic and international nonproliferation policies and treaties.

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OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, OAK RIDGE, TN,
RALPH HUTCHISON
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The US currently has a significant quantity of HEU placed under the administrative control of the IAEA at Y-12 in Oak Ridge. This situation is a model for other nations around the world; it gives moral standing to the US call for other nations to provide international verification and control of nuclear materials. It has been cited by the Secretary of Energy as one of our proudest achievements. The Storage and Disposition PEIS should envision not a reversal of this achievement, but the further realization of the goal of international control of nuclear materials; verification and administrative control of all strategic and surplus HEU no longer in warheads by the IAEA is not only a laudable goal, it is a reasonable alternative and must be analyzed in the Storage and Disposition PEIS.

From A to C

Weapons-usable highly enriched uranium exists around the nuclear weapons complex in a variety of physical forms, as secondaries, metals, oxides, scrap, residues and, in some cases, alloyed to other materials. To transform these materials from their current status (A) to the preferred form for long-term storage (C)—metal in a bellow cylinder—a significant amount of processing (B) will be required.

Currently, DOE has no NEPA analysis of the environmental impact of the processing operations required to prepare the nation's strategic HEU for long-term storage. The Storage and Disposition PEIS presumes materials are already processed. The Data Report (V/ES-043/R2) states, p.12: "The Disposition Program Organization assumes that all such material conversion will have been completed by the year 2020... Therefore, the Disposition PEIS does not consider the environmental impacts associated with material processing and repackaging required to render all HEU suitable for extended storage."

NEPA does not allow for the dismissal of consideration of environmental impacts by assuming they will be complete. DOE must, in some document, provide NEPA analysis of the significant waste streams and potential environmental impacts resulting from the processing and conversion of materials into the preferred long-term storage form. The Storage and Disposition PEIS is the obvious place for that analysis, and it must be included here. DOE can not keep from A to C without talking about B.

Conclusion

The buildings currently used for HEU processing and storage in Oak Ridge have outlived their design life and may not be dependable upon to store HEU reliably for fifty or a hundred more years. The minimal upgrades proposed in the Storage and Disposition PEIS would ostensibly achieve a "moderate hazard" facility level of protection; this is not adequate for facilities processing and storing fissile nuclear weapons materials.

Use of current Y-12 facilities, even with upgrades, fails to achieve:

- health and safety protection of workers, the environment, or the public in the event of a design-basis tornado or earthquake
- material accountability in the event of a design basis tornado or earthquake
- safeguards of fissile weapons materials from hostile attack
- the accommodation of international inspection, verification, or

01 06 00 Comment Number 14

Comment noted. As stated in Section 1.3 of the PEIS, the surplus fissile materials will be subject to international inspections, including inspections by the IAEA.

08 00 00 Comment Number 15

The processing of HEU for storage is outside of the scope of the PEIS. The Y-12 EA describes the processing required for both HEU secondaries and residues and provides the related environmental analyses.

01 01 00 Comment Number 16

The PEIS identifies and analyzes the waste streams for all of the disposition alternatives. With regard to the long-term storage alternatives, the PEIS only considers storage of materials that have been stabilized and separated. The processing stabilization of materials and any supporting NEPA analysis required is included in DOE's Environmental Management Program.

14/01.06.00

15/08.00.00

16/01.01.00

7/02.05.05
cont.

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01 01 00	Comment Number 17
Comment noted.	
01 04 00	Comment Number 18
The construction of new facilities for HEU and Pu storage is covered by the Collocation Alternative. Stabilization and storage of non-weapons-usable HEU are the subjects of other environmental documents and are beyond the scope of this PEIS.	
01 01 00	Comment Number 19
As described in Chapter 1 of the PEIS, DOE has an ongoing program to stabilize miscellaneous uranium materials. The Y-12 EA describes the processing required for both HEU secondaries and residues and provides the related environmental analyses. This PEIS addresses separated stabilized materials.	

control of dismantlement, processing and storage of HEU

What appears most reasonable from this analysis is that DOE should consider building a new facility, according to modern design standards, with a design life of at least 500 years, which would incorporate safeguards and transparency requirements to meet the international standards we would like other nations to meet.

DOE does not analyze a new facility as a reasonable alternative. In the redrafted Storage and Disposition PEIS, DOE must consider reasonable alternatives to the lone "upgrade in place alternative" analyzed in the current document, including the most reasonable of all alternatives—construction of a long-term, safeguarded storage facility with built in transparency, dedicated exclusively to the dismantlement, processing and storage of highly enriched uranium in non-weapons form.

DOE must also address in the Storage and Disposition PEIS the processing which will be required to turn HEU in its current state—whether as alloys, residues, scraps, secondaries or other forms—into the form expected for long-term storage. DOE has no NEPA analysis of these operations at the present time, and it may not leap over them to a hypothetical time when they are complete. To get from A to C one must go through B, and DOE must analyze that step in the Storage and Disposition PEIS.

Notes

¹ The Finding of No Significant Impact for the Interim Storage of Enriched Uranium Above the Maximum Historical Level at the Y-12 Plant in Oak Ridge, Tennessee [DOE/EA-0929, September 1994] states: "The Environmental Assessment (EA) evaluates the environmental effects of transportation, processing, and interim storage of bounding quantities of enriched uranium at the Y-12 Plant over a ten-year period."

² Tennessee Department of Environment and Conservation, Department of Energy Oversight Division, *Comments on: Proposed Interim Storage of Enriched Uranium Above the Maximum Historical Level at the Y-12 Plant in Oak Ridge, Tennessee*, December 8, 1994, p.4, comment #9 and p.6, comment #15, which states: "Of facilities listed in this EA (section 3.2) to be used for storage, none currently pass natural phenomena hazard assessments (appendix G)."

³ Letter from Victor Reis to Ralph Hutchison, coordinator of the Oak Ridge Environmental Peace Alliance, August 28, 1995.

⁴ A *Seismotectonic Model for the 300-Kilometer-Long Eastern Tennessee Seismic Zone*, Christine A. Powell, et. al., SCIENCE, Vol. 264, 29 April 1994, pp. 686ff. The article states: "The model indicates that the potential for a large, damaging earthquake in the East Tennessee Seismic Zone may be higher than the available historical record suggests."

⁵ *Making Old Buildings Meet New Standards*, YFEN-4665, D.R. Denton, et.al., August 1992, p.1.

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* DOE Order 5480.28 requires all facilities must maintain structural integrity to prevent loss of capability to perform functions consistent with their programmatic mission.

* *White Paper on the Hollow Clay Tile Wall Program*, Y/EN-4671, Center for Natural Phenomena Engineering, March 1992, p.3.

* *Nonproliferation and Export Control Policy Fact Sheet*, The White House, Office of the Press Secretary, September 27, 1993. This document is provided in Appendix A.1 of the Storage and Disposition PEIS.

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Appendix A

An Evaluation of the Seismic Tolerances of Y-12 Uranium Facilities

The EA on interim storage evaluates facilities for EU processing and storage over an "interim" period of 10+ years.

Assumptions:

A significant earthquake is possible in Oak Ridge within the next ten years.

Basis:

Science magazine, April 20, 1994, published an article which reported that East Tennessee had the second highest release of seismic strain energy in the US in the last ten years (New Madrid was highest). The authors, from UNC-Chapel Hill concluded "our model indicates the potential for a larger, damaging earthquake in the East Tennessee Seismic Zone may be higher than the available historical record suggests."

Current information on the buildings at Y-12 is available from two sources.

The Environmental Assessment, conducted in 1994, references UCRL-15910, as interpreted by Benedict (1993) in an in-house memo, which says the earthquake load was evaluated according to its ability to withstand ground motion at .19g. The figure was revised in April 1994 to .19g.

The US Department of Energy Defense Programs Safety Survey Report (Volume III: Appendix B, Uranium Facilities, prepared in November 1993 by SAIC for DOE, also references UCRL-15910, and notes "the earthquake specified in UCRL 15910 for design of high hazard facilities...for the Oak Ridge area, the event has a peak horizontal ground acceleration of 32g.

Horizontal Ground Acceleration in minimum seismic event according to UCRL - 15910	
Environmental Assessment	Safety Survey
.19g	32g

The application of these different numbers to each building results in widely

OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, OAK RIDGE, TN,
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divergent findings of seismic integrity. These buildings are listed in the EA as those involved in the handling, processing or storage of enriched uranium. Appendix G of the EA examines the seismic tolerance of the buildings. The table which follows offers a comparison of the results of the different standards.

Comparison of seismic tolerances of Enriched Uranium Facilities at Oak Ridge Y-12 Plant			
Building	EA	SS	
9204	does not meet requirements concrete reinforcement required	not included	
9204-2E	met target, some reinforcement required	not included	
9204-4	not included in App G	does not meet DOE design criteria total collapse at .086 - .17g	
9206	not included in App G	total collapse at .32g	
9212	meets "intent" of DOE STD 1020-94 provided modifications are made. Some wings do not meet seismic requirements	can withstand .12g 100% failure at .36g collapse at .32g	
9215/9998	generally sound, some welding required	would withstand .32g sprinkler system not seismically qualified	
9720-5	not included in App G	vaults would withstand .40g; other areas includ- ing HTR fuel rod storage would not withstand .32g	

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Buildings 9201-SN, 9201-SW, and 9995 are included in Appendix G of the EA though they are not listed as buildings active in enriched uranium operations in the text of the document.

Total collapse of buildings would result in worker injury and death, loss of control of special nuclear material, release of some quantities of HBU and other contaminants into the atmosphere, and pose clean-up challenges that are difficult to contemplate.

From the perspective of DOE's mission (dismantlement of nuclear weapons and secure storage of HBU for the next 10-30 years) it seems these buildings hardly qualify as "reliable."

It should be further noted that all facilities are above-ground facilities; such facilities are not considered completely safeguarded as they are vulnerable to attack from the air. This is true of Oak Ridge's facilities; air space above the Oak Ridge Reservation is not restricted from routine aviation traffic.

SUMMARY

The Department of Energy's Safety Survey Guidance indicates that key facilities engaged in the handling, processing and storage of HBU would be expected to experience total collapse in an earthquake of the magnitude the regulations assume for the Oak Ridge region (32g peak ground acceleration).

Total collapse of buildings would result in worker injury and death, loss of control of special nuclear material, release of some quantities of HBU and other contaminants into the atmosphere, and pose clean-up challenges that are difficult to contemplate.

Earthquakes are a distinct possibility in Oak Ridge, as the East Tennessee Seismic Zone, which includes Oak Ridge, has been determined to be the region of second highest release of seismic strain energy in the last decade. Researchers at UNC-Chapel Hill also determined that the potential for a large, damaging earthquake is greater than was previously thought.

All evidence suggests that the buildings designed and built in the 1940's of hollow, unreinforced clay tile, are not reliable for the critical mission of dismantlement, processing and secure storage of highly enriched uranium for the next 10-30 years.

RECOMMENDATION

DOE should address these problems immediately. DOE should report in an Environmental Impact Statement on the potential for modification of buildings to meet the Safety Survey design criteria rather than the more relaxed standards established in-house in Oak Ridge in 1993. The potential for achieving this level of

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building integrity and its cost should be measured against the cost and benefits of a new facility, designed especially for the dismantlement, processing and storage of FHEU.

A new facility should be given serious consideration. A new facility, designed to today's standards, which could accommodate verification requirements, which would offer greater protection to workers, the public and the environment, which would include adequate waste management facilities, would be preferable to the current conditions in which outdated, substandard and unreliable buildings which were designed for a different mission are pressed in a piecemeal fashion into service in a new mission.

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**OAK RIDGE RESERVATION LOCAL OVERSIGHT COMMITTEE,
OAK RIDGE, TN, AMY S. FITZGERALD
PAGE 1 OF 4**



May 2, 1996

U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC 20026-3786

RE: STORAGE AND DISPOSITION OF WEAPONS-USABLE FISSILE MATERIALS DRAFT
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT, (DOE/EIS-0229-D),
FEBRUARY 1996

The Oak Ridge Reservation Local Oversight Committee, Inc. (LOC) has reviewed the above-
referenced document, and submits the following comments and recommendations:

General Comments:

1. Local governments and citizens have been overwhelmed by DOE's timing in releasing
major National Environmental Policy Act documents. While the agency may save
money by holding multiple hearings in two days, cost savings do not outweigh the
negative aspects of a concurrent process.
2. The Oak Ridge Reservation locations chosen for long-term storage alternatives (Figure
2-5, p. 2-38) and for the disposition of plutonium (Figure 2-4-5, p. 2-81) are extremely
poor choices; these sites should be removed from consideration. Other potential sites
should be thoroughly analyzed to assure the public that proposed sites are suitable.
3. Figure S-15, on page S-37, is missing the Electrometallurgical Treatment Alternative.

Preferred Alternatives:

1. The statement on p. 2-258 is of great concern: "At the present time, the Department
does not have sufficient information upon which to select a preferred alternative. The
Final PEIS will contain a preferred alternative." If the DOE does not have sufficient
information to make a decision, it is premature for the agency to issue a final PEIS or
ROD. It is unreasonable to expect the public to make informed judgments, given that
the comment period and information was insufficient, and that the agency was not able
to identify preferred alternatives.
2. The Upgrades at Multiple Sites Alternative for Long-Term Storage appears to be the
most viable option. A more thorough analysis of potential environmental impacts at the
Purcell Site on the Ogalala aquifer, however, is essential. Consolidation of some of
the material at the Nevada Test Site's P-Tunnel may be feasible, and may enable
inclusion of the Rocky Flats material.
3. The LOC is unequivocally opposed to the co-location of plutonium and highly enriched

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08 02 00 Comment Number 1

The Department of Energy acknowledges the commentor's concern about the integration of public meetings on draft EISs. The joint meetings on the Storage and Disposition PEIS, the Stockpile Stewardship and Management PEIS, and the Pantex EIS were held using an integrated format at the request of several organizations and citizen advisory boards. They stated that such meetings "would be more convenient and provide a less confusing format for public participants. It would avoid duplication, permit a much more efficient use of the public's time and allow a more-informed decision about the issues."

01 04 00 Comment Number 2

Consistent with NEPA, DOE evaluated ORR as well as a range of other reasonable sites for storage and disposition of weapons-usable fissile materials.

16 00 00 Comment Number 3

The Electrometallurgical Treatment Alternative was mistakenly left out of Figure S-15 in the Draft PEIS Summary. Based on comments received, the bar charts have been deleted for the Final PEIS Summary.

08 03 00 Comment Number 4

Between the issuance of the Draft and Final PEIS, DOE has obtained information from a variety of sources. One of those sources of information was the public. Public input was used to determine the Preferred Alternative for the Final PEIS.

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's support for the Upgrade Storage Alternative. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

OAK RIDGE RESERVATION LOCAL OVERSIGHT COMMITTEE,
OAK RIDGE, TN, AMY S. FITZGERALD
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uranium. The Oak Ridge site has considerable expertise in the handling of HEU; long-term storage should be performed, with appropriate safeguards and upgrades, at Y-12. Other sites with expertise in the handling of plutonium should continue with that work. The two functions should not be co-mingled at any site. 4. The selection of a preferred alternative for disposition of plutonium is problematic at this time; the DOE should seriously consider separating disposition from the process—as was done with the Disposition of HEU—in order to reach a timely decision on Long-Term Storage.	7/08.03.01 cont.
Discussion of Disposition Alternatives 1. No Action would, in effect, make long-term monitored storage indefinite. However, given current uncertainties associated with disposition alternatives, it may be more cost effective to continue safe, secure storage until more audited options are presented. The recently issued Rocky Flats Cleanup Agreement includes provisions for temporary, on-site storage pending shipment off-site, long-term storage which allows for retrieval and monitoring, and permanent on-site disposal. The goal is to have plutonium removed from the site, beginning no later than 2010. The final PEIS should incorporate provisions of the Rocky Flats agreement.	8/01.00.00
2. The Deep Borehole alternative needs additional analysis on geological consequences; site characterization would have to precede a decision, as western locations would perform differently from sites in proximity to ground and surface water. Immobilized Disposition may be a viable alternative, but not enough is currently known for DOE to make a decision by late 1996. Further development is necessary.	9/08.03.01
3. Immobilization, especially Electrometallurgical Treatment, appears promising, but creates high-level waste. High-level waste has not yet been addressed (it was outside the scope of the Waste Management PEIS). Therefore, the option does not appear viable at this time.	10/08.03.00
4. Reactor options in the U.S. are not politically acceptable at this time. This situation may change, as global impacts of fossil fuel usage become better understood by the U.S. public. Reactor options are not currently economically viable either; the blending of HEU will provide domestic reactors with ample fuel in the near term. The DOE should continue exploring the CANDU Reactor, and possibly other foreign plutonium reactor options.	11/05.03.08
Thank you for the opportunity to comment on these important issues. Sincerely, <i>Amy S. Fitzgerald</i> Amy S. Fitzgerald, Ph.D. Executive Director cc: Earl Leming, Manager, TDEC DOE Oversight Division Jim Hall, Manager, Oak Ridge Operations Office	12/08.03.01

M-131

Comment Number 6

08 03 01

The Department of Energy acknowledges the commentor's support for new missions at NTS. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment Number 7

08 03 01

The Department of Energy acknowledges the commentor's opposition to the Collocation Alternative. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment Number 8

01 00 00

Separating the storage decision from the disposition decision would not effectively meet the purpose of and need for the Proposed Action. Planning for storage of the surplus Pu pending disposition is closely related to the planning for disposition itself, and could be affected by the technology(ies) selected to implement the Proposed Action. DOE is confident that a decision can be made on the disposition technology(ies) at the ROD, based on available data and environmental, technical, cost, schedule, and nonproliferation assessments completed to date.

Comment Number 9

08 03 01

Comment noted. The Final PEIS includes consideration of various agreements DOE has with external organizations, including the *Rocky Flats Cleanup Agreement*. These agreements will be integrated in DOE's decisionmaking process, as appropriate, for fissile materials storage and disposition.

RESOLUTION **NUMBER** 96-3

WHEREAS, the Oak Ridge Reservation Local Oversight Committee (LOC), being comprised of elected officials and citizen representatives of Anderson, Knox, Loudon, Meigs, Rhea, and Roane Counties and the City of Oak Ridge, was created to provide local input into decisions affecting the continued operation of the U.S. Department of Energy's (DOE) Oak Ridge Reservation; and

WHEREAS, thousands of U.S. and Russian nuclear weapons are slated to be retired within the next decade, resulting in excess weapons-grade fissile materials; and

WHEREAS, the improper management of fissile materials constitutes a threat to national and international security; and

WHEREAS, the DOE has issued the Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement (PEIS) which addresses activities that would result in the storage of weapons-usable plutonium and highly enriched uranium, and the disposition of surplus weapons-usable plutonium; and

WHEREAS, the DOE has simultaneously issued the Draft PEIS for Stockpile Stewardship and Management which recommends a technical program for maintaining the safety and reliability of the nuclear stockpile; and

WHEREAS, the DOE unduly restricted local government and public involvement on these important topics by issuing the documents at the same time and by holding concurrent public hearings in Oak Ridge; and

WHEREAS, the DOE has not developed a preferred alternative for either long-term storage or disposition of plutonium or long-term storage of highly enriched uranium; and

WHEREAS, employees at the Oak Ridge Y-12 facility are uniquely experienced in the safe and secure long-term storage of highly enriched uranium; and

WHEREAS, the proposed sites for co-location of plutonium and highly enriched uranium, and for disposition of plutonium on the Oak Ridge Reservation are technically unsuitable, and would conflict with economic diversification initiatives; and

WHEREAS, the National Academy of Sciences has concluded that none of the current options for long-term disposition of excess weapons plutonium can be expected to substantially reduce the inventories of excess plutonium from nuclear weapons for at least a decade; and

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08 03 00 **Comment Number 10**

The Department of Energy acknowledges the commentator's support for additional research and development before decisions are made on the Borehole and Immobilization Alternatives.

05 03 08 **Comment Number 11**

As noted in Appendix H of the Draft PEIS, DOE is addressing how the immobilized forms would perform in a high-level waste repository compared to those forms currently being evaluated for disposal in a licensed repository.

08 03 01 **Comment Number 12**

The Department of Energy acknowledges the commentator's support for the CANDU Reactor Alternative. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

OAK RIDGE RESERVATION LOCAL OVERSIGHT COMMITTEE,
OAK RIDGE, TN, AMY S. FITZGERALD
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WHEREAS, the citizens of LOC jurisdictions are entitled to assurances that the environmental and socioeconomic impacts associated with DOE's proposed alternatives are systematically evaluated; therefore, be it

RESOLVED that the Board of Directors of this Committee recommend that DOE implement the Upgrade Alternative for the storage of highly enriched uranium and the Upgrade at Multiple Sites Alternative for the long-term storage of plutonium, with some consolidation of materials where feasible; and be it further

RESOLVED that this Board of Directors urges the DOE to implement a modified No Action alternative for the disposition of plutonium, to include secure, above ground storage coupled with international inspections, until such time that more technically sound, economically viable, and politically acceptable options for long-term disposition are identified; and be it further

RESOLVED, that this resolution and attached comments shall be submitted to the U.S. Department of Energy for consideration in its preparation of the Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement, and that the Executive Director send a copy of this resolution to the Tennessee Congressional delegation and other relevant federal and state officials.

This, the 2nd day of May 1996.

Edmund A. Nephew
Edmund A. Nephew, Chairman
Board of Directors
Oak Ridge Reservation Local Oversight Committee

Amy S. Fitzgerald
Amy S. Fitzgerald, Ph.D.
Executive Director

M-131

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator's support for new missions at Hanford. Decisions on storage and disposition of weapon-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

DEPARTMENT OF ENERGY PLUTONIUM BURN HEARING

MEMBERS OF THE PANEL:

I'M JIM WATTS, I'M PRESIDENT OF THE OIL, CHEMICAL AND ATOMIC WORKERS UNION, LOCAL 1-369 AND ITS DISTRICT #1, COVERING NINE WESTERN STATES. I'M ALSO THE LABOR REPRESENTATIVE FOR THE HANFORD ATOMIC METAL TRADES COUNCIL ON THE HANFORD ADVISORY BOARD. THE HANFORD ATOMIC METAL TRADES COUNCIL IS THE GOVERNING BODY OF FOURTEEN AFFILIATE UNIONS THAT REPRESENT WORKERS ON THE HANFORD PROJECT. WE REPRESENT A HANFORD WORK FORCE OF OVER 3000 MEMBERS AND A NATIONAL MEMBERSHIP OF FOUR MILLION MEMBERS.

I APPEAR IN SUPPORT OF THE NATIONAL ACADEMY OF SCIENCES RECOMMENDATION TO BURN PLUTONIUM. LABOR HAS A NUMBER OF REASONS FOR SUPPORTING THIS OPTION AND IF ITS THE OPTION THAT'S PICKED, WE BELIEVE THAT BOTH THE FUEL FABRICATION AND THE BURN SHOULD OCCUR HERE. OUR RATIONAL FOR THIS BELIEVE IS BASED ON SOME OF THE FOLLOWING REASONS.

1/08.03.01

WE BELIEVE ITS IN THE NATIONAL INTEREST TO ELIMINATE THE WEAPONS GRADE PLUTONIUM RELEASED BY THE START AGREEMENTS. IN TODAY'S COST CONSCIOUS WORLD, WE THINK THE SENSIBLE THING TO DO IS CONVERT IT TO ENERGY BY BURNING IT IN REACTORS. THE HANFORD AREA IS UNIQUELY SUITED TO DO THIS FOR A NUMBER OF REASONS. WE CURRENTLY HAVE TWO MACHINES THAT HAVE THE ABILITY TO DO THE BURN (FFTF AND WNP-2) AND ANOTHER THAT COULD BE COMPLETED TO DO THE JOB (WNP-1). WE ALSO HAVE A BRAND NEW, NEVER USED, 750 MILLION DOLLAR FUEL FACILITY (FMEF). THUS, WE HAVE SEVERAL BILLION DOLLARS WORTH OF TRIED AND TESTED EQUIPMENT TO DO THE JOB WITHOUT THE DEPARTMENT OF ENERGY GOING THROUGH THE EXPENSE OF DOING BURN, OR ONE OF THE ALTERNATIVES, AT A TIME WHEN BUDGET DOLLARS ARE SHORT.

IN ADDITION TO THE EQUIPMENT TO DO THE JOB, WE ALSO HAVE THE EXPERTISE. WE HAVE SIEMENS WITH THE ABILITY TO MANUFACTURE THE FUEL. WE HAVE SANDVIK SPECIAL METALS TO MANUFACTURE THE TUBING TO HOUSE THE FUEL AND WE HAVE A DEDICATED WORK FORCE WITH THE EXPERTISE TO DO THE WORK AND SAFELY HANDLE THE WASTE. WE ALSO HAVE A COMMUNITY WHO ACCEPTS THIS TYPE OF WORK AND THE RESPONSIBILITY THAT GOES WITH IT.

WA-022

OIL, CHEMICAL, & ATOMIC WORKERS INTERNATIONAL UNION,
RICHLAND, WA, JIM L. WATTS
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WE HAVE NOTICED THAT THERE HAS BEEN AN INCREASED ACCEPTANCE FOR THIS MISSION STATEWIDE. THE GOVERNOR HAS EXPRESSED HIS WILLINGNESS TO ALLOW BURN TO GO FORWARD UNDER CERTAIN CONDITIONS. A NUMBER OF ENVIRONMENTAL GROUPS, EAGER TO DISPOSE OF PLUTONIUM IN ITS WEAPONS GRADE FORM, HAVE EXPRESSED RESERVED SUPPORT FOR BURN PROVIDED THAT THE RESULTING WASTE FROM SUCH A PROCESS DOESN'T FIND A PERMANENT RESIDENCE AT HANFORD. THEREFORE, LET ME SUMMARIZE LABOR'S POSITION AS FOLLOWS:

1. WE SHOULD DO THE BURN OPTION, AND DO IT AT HANFORD, MAXIMIZING THE POTENTIAL OF OUR EXISTING AND POTENTIAL EQUIPMENT AND THE EXPERTISE OF OUR WORK FORCE.
2. WE SHOULD MANUFACTURE THE FUEL USING THE FMEF FACILITY. IN FACT, IF THE BURN IS NOT DONE HERE, THE FUEL MANUFACTURE SHOULD BE DONE HERE IN ANY CASE.
3. THE RESIDUAL WASTE AND ALL MATERIAL SHOULD ONLY RESIDE AT HANFORD IN TEMPORARY STORAGE.
4. BECAUSE THE STATE AND THE COMMUNITY ARE WILLING TO PERFORM THIS NATIONAL SERVICE, HANFORD WASTE SHOULD HAVE A PRIORITY STATUS FOR OFF-SITE STORAGE.

THANK YOU FOR THE OPPORTUNITY TO PRESENT OUR VIEWS.

OIL, CHEMICAL & ATOMIC WORKERS
INTERNATIONAL UNION, LOCAL 1-369
BOX 524
RICHLAND, WASHINGTON 99352

JIM L. WATTS,
PRESIDENT

1/08.03.01
cont.

WA-022

Comment ID: P0013
Date Received: April 18, 1996
Name: D. Olson
Address: Victor [ID]

Transcription:

I would like to not see any of that plutonium come here. That's all. Bye. | 1/08.03.01

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentator's opposition to new missions at INEL. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

P-013

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Operation Commonsense

April 22, 1996
DOE Hearing

THE LESSONS OF HISTORY

Five years ago the business community rallied for an event that was to hail a revival for the business fortunes of the Texas Panhandle. Hundreds of supporters and advocates of an enlarged Pantex paraded to the Civic Center, where boosters promised the crowd an expanded Pantex plant and 10,000 to 15,000 new jobs.

Local newspapers heralded the event as a spearhead for an economic renaissance and noted the unqualified and total support from the community. As details of the expanded operations were disclosed, a more sober appraisal revealed that some of the missions might be less than desirable and others far too risky for reasonable people, concerned with the area's long term best interest, to consider. Now after five years we know that not only did 10,000 jobs never materialize, no new jobs materialized and in fact Pantex has announced a cut back in jobs beginning in 1998. Wisely, the community decided not to tie its future to Pantex and now our economy is rebounding nicely and there is every reason to believe this economic progress will continue.

Today this community is a better more informed community. Despite hundred of thousands of dollars spent by the city on a public relations campaign intended to scare residents into unconditional support for Pantex, citizens have developed a more cautious approach, recognizing the important differences and distinctions in various missions considered for the plant. The often repeated scare tactics warning that Pantex is closing and Amarillo will quickly be a ghost town fall are no longer working and reasonable people have decided that some work at Pantex is fine and other work, like plutonium reprocessing, is unacceptable.

The day is gone when issues surrounding Pantex fit neatly into simplistic categories of "for Pantex or against it". Most of us support Pantex. The issues today surrounding future missions at Pantex are multi-layered issues often requiring technical, scientific and public policy inputs. While generally the local community supports disassembly and interim storage, the public is more ambivalent towards longer term storage and high explosive burning, and a clear majority are flat against plutonium reprocessing.

Plutonium processing has a long and troubled history in this country. The Scientific American Magazine, in the current month's issue, reports that Hanford Washington, only one site where processing took place, has spent \$9 billion dollars thus far on cleanup and will spend one billion dollars per year for the next 40 years on additional cleanup work. The job currently employs 14,000 workers and is the largest civilian project in our country's history with cleanup representing more than one third of the DOE budget. Whether it is Rocky Flats

1/08.03.01

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TX-062

OPERATION COMMONSENSE, AMARILLO, TX
PAGE 2 OF 2

or Hanford the story is always the same – total contamination of the sites and surrounding areas including damage to people, water, air and land. DOE call these areas "national sacrifice areas". We don't want to become a national sacrifice area.

The message here is simple. People are not prepared to sign off on a "anything goes" mentality. We are certainly not ready to be the national guinea pig for untested plutonium reprocessing technologies that have contaminated every site in the country and now require billions of dollars a year to restore and will continue to do so over the next few decades. We are not ready to sacrifice our quality of life, our agricultural assets, and our safety for a short term economic boost.

1/08.03.01
cont.

TX-062

OSBORNE, JERI, AMARILLO, TX
PAGE 1 OF 3

COMMENTS REGARDING PANTEX HEARINGS

AMARILLO, TEXAS, APRIL 22, 1996 by JERI OSBORNE

I am Jeri Osborne. My husband Jim and I live and farm across FM 293 on the northside, downwind and downstream from the Pantex site. We raised our family of three children, one nephew, and kept another nephew and niece a good part of their lives on the farm. Jim and his brother and sisters were also raised there. His father bought the place in 1927.

I have come to speak on health and safety issues as well as the feasibility of having plutonium, other nuclear materials, and other types of hazardous materials and chemicals in our front yard as well as over the area's major water supply and in this very productive and vital agricultural ^{zone}. --Major food source -- for the nation as well as the world just for Amarillo's "powers that be" to possibly create a few more jobs and wealth for themselves.

At this time, there are no known results of long term health exposures to the effects of whatever is the present mission of Pantex --let alone future missions that may result from DOE's ~~may~~ plan. The technology is just not available at this time to perform any of the proposed missions. DOE does not now know what to do with surplus and weapon grade plutonium and other nuclear materials. How can they be so sure of the consequences of future missions that may be brought to the site?

1/01.05.00

TX-064

01 05 00 Comment Number 1

All technologies described in the PEIS are either proven, existing, or are being demonstrated at this time. DOE has eliminated the immature technologies during the screening process to ensure that all the reasonable alternatives analyzed in the PEIS would be ready for implementation as planned. Alternatives selected will be implemented in compliance with all environmental, health, and safety standards and requirements, and will not result in long-term health exposures.

Pantex is probably cleaner than other DOE sites, but it is on the superfund list. It may be safer than other sites, but we can prove that accidents -- at least I hope the incidents that have affected us personally were accidents -- have happened that has endangered our property as well as our personal safety and others in the neighborhood of Pantex. There have been numerous major fires on the site, three or four within the past two years. We took cold drinks and ice to the fireman on various occasions. We have had cast steel shrapnel chunked at us. We have picked up some 300 to 400 pounds of a naval breach block -- one piece weighing 59 pounds. Some of this shrapnel was found some one and one-half to two miles from where it was exploded. We have had tractor tires ruined from it.

Through the years, we have had windows broken, pictures knocked off walls, etc. On October 4, 1995, a very large charge of explosive was set off to signal the start of an emergency management drill. This "test" broke our house, cracked the slab, rafters, walls, brick, shower, plumbing causing flooding of the basement, and other damages resulting in some \$30,000 in repairs and replacement of carpets and other floor coverings, rebuilding the shower, cracks, etc. We also must have the house leveled. This incident was not only very frightening and dangerous, but has caused us much anxiety and inconvenience. Trying to put up family for my mother's death and funeral and having family in for Christmas with a flooded basement, large holes drilled through the living room floor and in other areas of the house causes a great deal of stress to say the least.

2/09/09.04

09 09 04 Comment Number 2

The Department of Energy is committed to conducting operations at Pantex and all other facilities in a manner that is in strict compliance with DOE Orders and applicable regulations to protect the environment, health, and safety of workers and the public. Section 3.5.9 of the PEIS discusses a number of related topics including human health effects studies for communities surrounding Pantex, the accident history related to the actions of this PEIS, and the Emergency Management Program that would be activated in the event of an accident. The impacts to the public of normal operations and potential accidents are presented in Chapter 4 and Appendix M, respectively.

TX-064

Too many questions are yet unanswered by the studies that have been conducted. Granted, it would be impossible to anticipate all potential problems that may arise, but there does seem to be a lack of scientific research used for the study. It would appear that a conclusion has been drawn and figures to support that conclusion were used without any real scientific information.

One must question the credibility of those responsible for the documents and the reliability of the studies when such glaring inaccurate information can be found within the documents. One example of this is found in Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement, Volume II, Pages 4-796 and 4-797 clearly show the town of Canyon outside the 80 kilometers radius and located within Deaf Smith County just north of Castro County. The population distribution map should show Canyon to be just south of Amarillo in Randall County, perhaps some 40 kilometers from Pantex, at the most.

We do not see the location of long term storage of nuclear materials, the possibility of processing /reprocessing, modification of pits, or the location of nuclear reactors at Pantex very good ideas. Nor do we believe the moving of all the high explosive activities ^{to Pantex} in our best interests. The DOE has sites that are much larger and much farther away from population, agricultural areas, and major sources of water for its future missions than is Pantex.

Thank you.

3/08.00.00

4/09.00.08

5/08.03.01

TX-064

08 00 00 Comment Number 3

The Department of Energy is required to present comparable information on each of the alternatives to which that information is available. The level of technical information available is the least for the Borehole Alternatives, highest for the Reactor Alternatives, with Immobilization Alternatives falling in between these two categories.

In separate studies, DOE has prepared Technical Summary Reports that use the best available technical data to provide the public with additional technical cost and schedule information on each of the alternatives.

09 00 08 Comment Number 4

The maps located in all sections of the PEIS, including the Environmental Justice section, were reviewed and updated, as necessary, prior to the publication of the Final PEIS.

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

COMMENTS REGARDING PANTEX HEARINGS

AMARILLO, TEXAS, APRIL 22, 1996 by JIM OSBORNE

I am Jim Osborne and I farm across the road north from Pantex.

We don't have enough water.

Amarillo dried up our domestic well ten days after they started pumping a well across the fence from us in 1965. Since then, we have lost 125 feet of water from static level. Most of Amarillo's wells all located within a five mile radius of Pantex, two of which are within one-half mile of the north boundary, won't pump but one-half what they did earlier.

Pantex's wells are pumping only one-half the water they did at one time.

We don't have enough water for reprocessing. We don't have enough water for nuclear reactors.

According to an enclosure with the water bills a couple of years ago, Amarillo set a new one day record on June 26, 1994, for one day's pumping of 92 million gallons. They have pumped one and one-half times their allowable for at least the last six years. They have a variance from Panhandle Ground Water Conservation District if they would develop other sources of water. Amarillo, Southwestern Public Service and the Canadian River Water Authority have been swapping water rights to land that doesn't have enough water to justify development. I've heard that Amarillo drilled 10 test holes in

1/08.03.01

TX-059

09 04 04 Comment Number 2

It is possible that treated wastewater from the City of Amarillo could be used to supply the Evolutionary LWR (Section 4.3.5.4.4). Cost issues are not within the scope of this PEIS. In this case, there would be no additional impacts over the No Action Alternative to groundwater resources. Environmental impacts from siting an Evolutionary LWR at Pantex would be evaluated in future site-specific reviews, as required, if this technology is chosen as a disposition alternative.

In regards to groundwater withdrawals, Pantex groundwater withdrawals are much less than those from the City of Amarillo well field. The quantities given for Pantex are accurate.

For all new construction, Pantex will comply with Executive Order 12902, *Energy Efficiency and Water Conservation at Federal Facilities* for water conservation.

northeastern Potter County and the best test they had was 200 gallons per minute. So they didn't develop that field. I have heard a rancher say he couldn't even get good livestock water in places.

Amarillo is not worried about contamination of the Ogallala aquifer. They are going to dry up their well field here in Carson County north of Pantex before it becomes contaminated.

I understand the city is refurbishing old wells in the field southwest of Amarillo that they already pumped almost dry and abandoned 25 years ago. They won't pump much water from those wells. They are already talking water use restrictions for the city for this summer. They should practice good water conservation anyway.

From where will Pantex import water and at what cost for plutonium processing/reprocessing or for cooling nuclear generators?

I understand that a property owner may sue a government entity or entities for devaluing the land more than that 2%. Our land has certainly been devaluated more than that.

If it takes 10 to 15 years to get a reactor into production and the expected life of that reactor is about 40 years, from where is the water coming at at what cost?

I find a tremendous discrepancy in the groundwater withdrawal stated in Volume II of Storage and Disposition. It stated the facility currently use is 236 million liters (221 million gallons per year) when Amarillo set a new record for one day's pumping of 92 million gallons in one day, June 26, 1994.

We just don't have enough water for any new DOE projects.

2/09.04.04

2/09.04.04
cont.

TX-059

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at INEL. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment ID: P0012

Date Received: April 18, 1996

Name: Alora Oud

Address: Ruppel, ID

Transcription:

This is Alora Oud at 208-745-6038. My husband and I are not in favor of bringing plutonium grade material to the INEL. Due to, we don't believe it's as safe as they try to make us believe. Thank you.

1/08.03.01

P-012

OVERSBY, VIRGINIA M., LIVERMORE, CA
PAGE 1 OF 1

3-630

14 00 00 Comment Number 1

The Department of Energy applied a screening process along with public input to identify a range of reasonable alternatives for analysis in the Draft PEIS, and utilized technical reports and analyses from national laboratories and industry to develop a final list of alternatives. Details were published in a separate report, *Summary Report of the Screening Process to Determine Reasonable Alternatives for Long-Term Storage and Disposition of Weapons-Usable Fissile Materials* (DOE, March 1995).

April 4, 1996

U. S. Department of Energy
Office of Fissile Materials Disposition
P. O. Box 23786
Washington, D. C. 20026-3786

Subject: Comments on the *Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement*.

The Draft PEIS includes several options for burning of plutonium in mixed uranium-plutonium oxide fuels. These options have the benefit of using the energy content of the plutonium while converting the plutonium into spent fuel, in agreement with the National Academy recommendations. The use of MOX fuel, however, can be seen as encouraging fuel cycles that can be used to breed plutonium.

A new fuel type is being developed in Switzerland by staff at the Paul Scherrer Institute. The fuel is based on zirconium dioxide as the matrix for incorporating plutonium in solid solution. The fuel is stabilized by addition of yttria and reactivity is controlled by addition of erbium oxide. The fuel can be used at rather high plutonium contents and produces 95% destruction of the fissile ^{239}Pu , which is much higher than achieved in MOX burning.

An additional advantage of the zirconia-based fuel is that it could be used as a disposal waste form of high durability either before or after burning. Thus, the fuel pellets could be considered as a parallel option for ceramic immobilization of plutonium as well as an additional option for reactor burning of plutonium.

I would like to suggest that the Department of Energy add the use of this non-fertile fuel to the options for disposition of plutonium in the final PEIS. A more detailed discussion of the advantages of this fuel for plutonium disposition is contained in the enclosed document - "Plutonium destruction in a non-fertile, ZrO_2 -based fuel - a reactor option for disposition of surplus plutonium", by V. M. Oversby and C. C. McPheeters, UCRL-ID-123613.

V. M. Oversby
Virginia M. Oversby
1647 Vancouver Way
Livermore, CA 94550

1/14,00.00

M-027



**Office of
Fissile Materials Disposition**

United States Department of Energy

**Storage and Disposition of
Weapons-Usable Fissile Materials
Final Programmatic Environmental
Impact Statement**

Comment Response Document

Volume IV - Part B

December 1996

**For Further Information Contact:
U.S. Department of Energy
Office of Fissile Materials Disposition, 1000 Independence Ave., SW, Washington, DC 20585**

COVER SHEET

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

TITLE: *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement* (DOE/EIS-0229)

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For further information on the U.S. Department of Energy/*National Environmental Policy Act* (NEPA) process, call (800) 472-2756

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ABSTRACT: This document analyzes the potential environmental consequences of alternatives for the long-term storage (up to 50 years), including storage until disposition, and disposition of weapons-usable fissile materials from U.S. nuclear weapon dismantlements under the responsibility of the DOE. Long-term storage of nonsurplus inventories of weapons-usable plutonium (Pu) and highly enriched uranium (HEU) are required for national defense purposes, while the disposition of surplus weapons-usable Pu is necessary in order to implement our national nonproliferation policy. In addition to the No Action Alternative, this PEIS assesses three storage alternatives (that is, upgrade at multiple sites, consolidation of Pu, and collocation of Pu and HEU) at six DOE candidate sites located across the country. These sites are Hanford Site, Nevada Test Site, Idaho National Engineering Laboratory, Pantex Plant, Oak Ridge Reservation, and Savannah River Site. Although they are not candidate sites for storage, Rocky Flats Environmental Technology Site (RFETS) and Los Alamos National Laboratory are assessed for the No Action Alternative. For the disposition of surplus Pu, three alternative categories (that is, deep borehole, immobilization, and reactor) with nine primary alternatives are assessed at several DOE and representative sites for analysis purposes. Evaluations of impacts on site infrastructure, water resources, air quality and noise, socioeconomics, waste management, public and occupational health and safety, and environmental justice are included in the assessment. The intersite transportation of nuclear and hazardous materials is also assessed. DOE's Preferred Alternative is identified in this Final PEIS. The Preferred Alternative for storage is a combination of No Action and Upgrade Alternatives for the various DOE sites, and phaseout of Pu storage at RFETS. The Preferred Alternative for disposition of surplus Pu is to pursue a disposition strategy involving a combination of immobilization and reactor alternatives, including vitrification, ceramic immobilization, and existing reactors.

PUBLIC INVOLVEMENT: The DOE issued a Draft PEIS on March 8, 1996, and held a formal public comment period on the Draft through June 7, 1996. In preparing the Final PEIS, DOE considered comments received via mail, fax, electronic bulletin board (Internet), and transcripts of messages recorded by telephone. In addition, comments and concerns were recorded by notetakers during interactive public meetings held during March and April 1996 in Denver, CO, Las Vegas, NV, Oak Ridge, TN, Richland, WA, Idaho Falls, ID, Washington, DC, Amarillo, TX, and North Augusta, SC. Comments received and DOE's responses to those comments are found in Volume IV of the Final PEIS.

FOREWORD

This is the *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement* (PEIS), prepared by the U.S. Department of Energy, Office of Fissile Materials Disposition. The document is composed of four volumes and a separate Summary. Changes made since the Draft PEIS are shown by change bar notation (vertical lines adjacent to the changes) in this Final PEIS for both text and tables. Deletion of one or more sentences is indicated by the phrase "Text deleted." in brackets. This Final PEIS includes the Preferred Alternative, which is a combination of alternatives. The Preferred Alternative is described in Section 1.6 and Chapter 2 of Volume I, and analyzed in Chapter 4 of Volume II. For all the alternatives, including the Preferred Alternative, a comparison of alternatives is presented in Section 2.5 of Volume I and a summary of impacts is presented in Section 4.6 of Volume II (Part B). Information from these sections is also presented in the Summary.

Volume I contains Chapters 1 through 3 of the PEIS. Chapter 1 includes a description of the history and background of the fissile materials disposition program, the purpose of and need for the proposed action, a summary of changes made to the Draft PEIS, and the Preferred Alternative. Chapter 2 gives a description of the proposed long-term storage and disposition alternatives, a description of how the alternatives were selected and why others were eliminated from further consideration, and a comparison of the alternatives in terms of their potential environmental impacts. Chapter 3 describes the affected environment at candidate long-term storage locations, and at sites and environmental settings for the disposition alternatives.

Volume II (Parts A and B) contains Chapters 4 through 10 of the PEIS. Chapter 4 describes the potential environmental impacts resulting from construction and operation of the proposed long-term storage and disposition alternatives, including the Preferred Alternative. Also contained in this chapter are intersite transportation impacts, a discussion of environmental justice issues, cumulative impacts due to the implementation of the proposed alternatives in addition to other actions at a site, avoided environmental impacts, and a summary of impacts. Chapter 5 provides a list of references used in the preparation of this document. Chapter 6 provides an index to the main text of the PEIS. Chapter 7 is a glossary of key terms used in the document. Chapter 8 is a list of preparers. Chapter 9 lists government agencies and organizations contacted during the preparation of this PEIS. Chapter 10 provides a distribution list for the document.

Volume III contains the appendices to this PEIS. Appendix A contains the fact sheet on the President's *Nonproliferation and Export Control Policy*, and the Joint Statement Between the United States and Russia on Nonproliferation. Appendix B provides specifications for key buildings within each facility complex analyzed in this PEIS. Appendix C describes requirements for construction and operation of the various facilities required to accomplish the storage and disposition activities essential to the alternatives described in this PEIS. Appendix D provides information on overall water usage for the storage and disposition facilities discussed in this PEIS. Appendix E gives a general overview of the Department of Energy (DOE) environmental restoration and waste management program, baseline waste management at DOE sites, and project-specific waste management activities associated with the proposed long-term storage and disposition alternatives. Appendix F provides detailed data supporting the air quality and noise analyses. Appendix G describes the methodology used for intersite transportation risk analysis and provides a summary of hazardous materials shipped to and from DOE sites, plus information on shipping containers. Appendix H evaluates various plutonium waste forms for potential disposal in a high-level waste repository. Appendix I describes operations of a Canadian Deuterium Uranium Reactor. Appendix J identifies the compliance requirements associated with the Proposed Action, as specified by the major Federal and State environmental, safety, and health statutes, regulations, and orders. Appendix K lists the scientific names of common nonthreatened and nonendangered animal and plant species identified in Chapters 3 and 4. Appendix L includes the supporting data used for assessing the No Action

Alternative in the socioeconomics sections of this PEIS. Appendix M presents detailed information on the potential health risks associated with releases of radioactivity and hazardous chemicals from the proposed storage and disposition alternatives during normal operations and from postulated accidents. Appendix N describes different concepts for, and provides cost and benefit information on, the multipurpose reactor. Appendix O provides a description of facilities and operations for a can-in-canister approach to plutonium immobilization at the Savannah River Site in South Carolina. Appendix P describes the potential environmental impacts of using the Manzano Weapons Storage Area in New Mexico for the long-term storage of plutonium pits. Appendix Q identifies the potential health impacts from the storage of Rocky Flats Environmental Technology Site plutonium pits at the Pantex Plant in Texas. Appendix R discusses the aircraft crash and radioactive release probabilities for proposed storage and disposition facilities at Pantex Plant in Texas. A separate Classified Appendix was also prepared, which provides detailed analysis results for intersite transportation risks based on classified inventories of materials stored at DOE sites.

Volume IV (Parts A and B) is the Comment Response Document. It contains an overview of the public comment process, the comments received on the Draft PEIS during the public review period, and the DOE responses to those comments, including identifying changes made to the Draft PEIS in response to public comments.

The Summary provides a brief overview of the PEIS. It includes the purpose of and need for the Proposed Action, a description of the storage and disposition alternatives including the Preferred Alternative, and the potential environmental impacts resulting from these alternatives.

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LIST OF ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic
ACEC	Area of Critical Environmental Concern
ACGIH	American Conference of Governmental Industrial Hygienists
AEA	<i>Atomic Energy Act</i>
AEC	Atomic Energy Commission
AGV	automated guided vehicle
ALARA	as low as reasonably achievable
ALE	Arid Lands Ecology Reserve
ANL-W	Argonne National Laboratory-West
APSF	Actinide Packaging and Storage Facility
AQCR	Air Quality Control Region
ARA	Auxiliary Reactor Area
ARIES	Advanced Recovery and Integrated Extraction System
BEA	Bureau of Economic Analysis
BEIR	biological effects of ionizing radiation
BLM	Bureau of Land Management
BOP	balance-of-plant
BPA	Bonneville Power Administration
BWR	boiling water reactor
CAA	<i>Clean Air Act</i>
CANDU	Canadian deuterium uranium
CAS	Chemical Abstracts Service
CCDF	complimentary cumulative distribution function
CEQ	Council on Environmental Quality
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
CFA	Central Facilities Area
CFR	Code of Federal Regulations
CGTO	Consolidated Group of Tribes and Organizations
CI	confidence interval
CIC	can-in-canister
CLUP	Comprehensive Land-Use Plan
CMR	Chemistry and Metallurgy Research

COE	Corps of Engineers
Complex	Nuclear Weapons Complex
CRD	Comment Response Document
CRT	Cargo Restraint Transporters
CWA	<i>Clean Water Act</i>
D&D	decontamination and decommissioning
DAF	Device Assembly Facility
DCG	derived concentration guide
DHLW	defense high-level waste
DNB	departure of nucleate boiling
DNFSB	Defense Nuclear Facilities Safety Board
DNL	day and night average sound levels
DNWR	Desert National Wildlife Range
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
DP	Office of Defense Programs
DRCOG	Denver Regional Council of Governments
DWPF	Defense Waste Processing Facility
EA	environmental assessment
EBR	Experimental Breeder Reactor
EDNA	Environmental Design for Noise Abatement
EIA	Energy Information Administration
EIS	environmental impact statement
EM	Office of Environmental Management
EPA	Environmental Protection Agency
ERR	excess relative risk
ES&H	Office of Environment, Safety, and Health
ESA	<i>Endangered Species Act</i>
ETF	effluent treatment facility
FAIR	Forest, Agriculture, Industry, and Research
FCF	Fuel Cycle Facility
FEMA	Federal Emergency Management Agency
FFCA	Federal Facility Compliance Agreement
FFTF	Fast Flux Test Facility

FLPMA	<i>Federal Land Planning Management Act</i>
FMEF	Fuels and Materials Examination Facility
FMF	Fuel Manufacturing Facility
FONSI	Finding of No Significant Impact
FR	Federal Register
FSAR	Final Safety Analysis Report
GBZ	Glass-bonded zeolite
GESMO	Generic Environmental Statement on Mixed Oxide
GIS	Geographical Information System
GMA	<i>Growth Management Act</i>
GMODS	Glass Material Oxidation Dissolution System
HAD	hazard analysis document
Hanford	Hanford Site
HE	high explosives
HEAST	Health Effects Summary Table
HEPA	high-efficiency particulate air
HEU	highly enriched uranium
HEU EIS	<i>Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement</i>
HFEF	Hot Fuel Examination Facility
HI	Hazard Index
HLW	high-level waste
HQ	Hazard Quotient
HRA EIS	<i>Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan</i>
HVAC	Heating Ventilation and Air Conditioning
HWR	Heavy Water Reactor
IAEA	International Atomic Energy Agency
ICPP	Idaho Chemical Processing Plant
ICRP	International Commission of Radiological Protection
INEL	Idaho National Engineering Laboratory
IRIS	Integrated Risk Information System
ISCST2	Industrial Source Complex Short-Term Model Version 2
ISO	International Standards Organization
IWG	Interagency Working Group
K-25	K-25 Site

L/ER	Energy Research Program Office
LA	Limited Area
LAA	Limited Access Area
LANL	Los Alamos National Laboratory
LANSCE	Los Alamos Neutron Scattering Center
LCF	latent cancer fatalities
LDR	Land Disposal Restriction
LEU	low-enriched uranium
LIGO	Laser Interferometer Gravitational-Wave Observatory
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
LOB	Laboratory Office Building
LWR	Light Water Reactor
MAA	Material Access Area
MACCS	Melcor Accident Consequence Code System
MC&A	Material Control and Accountability
MD	Office of Fissile Materials Disposition
MEI	maximally exposed individual
MHR	Modular Helium Reactor
MMI	Modified Mercalli Index
MOX	mixed oxide
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	<i>Native American Graves Protection and Repatriation Act</i>
NAS	National Academy of Sciences
NCDC	National Climatic Data Center
NCRP	National Commission of Radiological Protection
NEIC	National Earthquake Information Center
NEPA	<i>National Environmental Policy Act</i>
NERP	National Environmental Research Park
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFS	Nuclear Fuel Services Fuel Fabrication Plant
NHPA	<i>National Historic Preservation Act</i>
NIOSH	National Institute of Occupational Safety and Health
NMSF	Nuclear Material Storage Facility

NMSM	Nuclear Materials and Stockpile Management
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRF	Naval Reactors Facility
NRHP	National Register of Historic Places
NTS	Nevada Test Site
NTS EIS	<i>Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada</i>
NWI	National Wetlands Inventory
NWPA	<i>Nuclear Waste Policy Act</i>
NWS	National Weather Service
OCRWM	Office of Civilian Radioactive Waste Management
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
OSHA	Occupational Safety and Health Administration
PA	Protected Area
Pantex	Pantex Plant
Pantex EIS	<i>Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components</i>
PBF	Power Burst Facility
PCV	Primary Containment Vessel
PEIS	programmatic environmental impact statement
PEL	Permissible Exposure Level
PFP	Plutonium Finishing Plant
PFP EIS	<i>Plutonium Finishing Plant Stabilization Environmental Impact Statement</i>
PIDAS	Perimeter Intrusion Detection and Alarm System
PNNL	Pacific Northwest National Laboratory
PPA	Property Protection Area
PRA	probabilistic risk assessment
PSAR	Preliminary Safety Analysis Report
PSD	Prevention of Significant Deterioration

PUREX	Plutonium-Uranium Extraction Plant
PWR	pressurized water reactor
R&D	Research and Development
RCRA	<i>Resource Conservation and Recovery Act</i>
REA	regional economic area
RIA	reactivity insertion accident
RFETS	Rocky Flats Environmental Technology Site
RIMS II	Regional Input-Output Modeling System
RL	Richland Operations Office
ROD	Record of Decision
ROI	region of influence
RSWF	Radioactive Scrap and Waste Facility
RWMC	Radioactive Waste Management Complex
RWMS	Radioactive Waste Management Site
SAR	Safety Analysis Report
SARA	<i>Superfund Amendments and Reauthorization Act</i>
sd	standard deviation
SDWA	<i>Safe Drinking Water Act</i>
SEB	Security Equipment Building
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SISMP	Site Integrated Stabilization and Management Plan
SMR	Standardized Mortality Ratio
SNF	spent nuclear fuel
SNL	Sandia National Laboratories
SRR	standardize rate ratio
SRS	Savannah River Site
Stockpile Stewardship and Management PEIS	<i>Programmatic Environmental Impact Statement for Stockpile Stewardship and Management</i>
Storage and Disposition PEIS	<i>Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement</i>
SST	safe secure trailer
START	Strategic Arms Reduction Talks

TA	Technical Area
TAN	Test Area North
TCPLP	toxicity characteristic leaching procedure
TDEC	Tennessee Department of Environmental Conservation
TDS	total dissolved solids
TI	transport index
TLV	Threshold Limit Values
TNRCC	Texas Natural Resources Conservation Commission
TRA	Test Reactor Area
TRU	transuranic
TSCA	<i>Toxic Substance Control Act</i>
TSD	Transportation Safeguards Division
TSP	total suspended particulates
TSR PEIS	<i>Tritium Supply and Recycling Programmatic Environmental Impact Statement</i>
TVA	Tennessee Valley Authority
USFWS	United States Fish and Wildlife Services
USGS	United States Geological Survey
VOC	volatile organic compound
VRM	Visual Resource Management
WAC	Waste Acceptance Criteria
Waste Management PEIS	<i>Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste</i>
WIPP	Waste Isolation Pilot Plant
WMIS	Waste Management Information System
WNP	Washington Nuclear Power
WPPSS	Washington Public Power Supply System
WSA	Weapons Storage Area
WSCC	Western Systems Coordinating Council
WSCF	Waste Sampling and Characterization Facility
Y-12	Y-12 Plant
Y-12 EA	<i>Environmental Assessment for the Proposed Interim Storage of Enriched Uranium Above the Maximum Historical Level at the Y-12 Plant, Oak Ridge, Tennessee</i>
YMSCO	Yucca Mountain Site Characterization Office
ZPPR	Zero Power Physics Reactor

CHEMICALS AND UNITS OF MEASURE

°C	degrees Celsius
Ci	curie
cm	centimeter
CO	carbon monoxide
CO ₂	carbon dioxide
Co-60	cobalt-60
Cs	cesium
Cs-137	cesium-137
CsCl	cesium chloride
Cu	copper
dB	decibel
dBA	decibel A-weighted
°F	degrees Fahrenheit
ft	feet
ft ²	square feet
ft ³	cubic feet
g	gram
G	gravitational acceleration
gal	gallon
Gd	gadolinium
GWd	gigawatt-days
ha	hectare
H ₂	hydrogen
HF	hydrogen fluoride
HNO ₃	nitric acid
hr	hour
I-129	iodine-129
in	inch
k _{eff}	effective neutron multiplication factor
kg	kilogram
km	kilometer
km ²	square kilometer

Kr	krypton
kV	kilovolt
l	liter
lb	pound
m	meter
m ²	square meter
m ³	cubic meter
mCi	millicurie
mg	milligram
mi	mile
mi ²	square miles
min	minute
mph	miles per hour
mrem	millirem (one thousandth of a rem)
MW	megawatt
MWe	megawatt electric
N ₂	nitrogen
nCi	nanocurie (one-billionth of a Curie)
Ni	nickel
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
O ₃	ozone
oz	ounce
Pb	lead
PCB	polychlorinated biphenyl
pCi	picocurie (one-trillionth of a Curie)
PM ₁₀	particulate matter less than or equal to 10 microns
ppm	parts per million
Pu	plutonium
PuCl	plutonium chloride
PuO ₂	plutonium dioxide
rad	radiation absorbed dose
rem	roentgen equivalent man
RfC	Reference Concentration
RfD	Reference Dose

s	second
SO ₂	sulfur dioxide
Sr-90	strontium-90
t	metric ton
Tc-99	technetium-99
ton	short ton
U	uranium
U-233	uranium-233
U-234	uranium-234
U-235	uranium-235
U-236	uranium-236
U-238	uranium-238
UF ₆	uranium hexafluoride
UNH	uranyl nitrate hexahydrate
UO ₂	uranium dioxide
U ₃ O ₈	triuranium octaoxide
VOC	volatile organic compound
yd	yard
yr	year
µg	microgram (one-millionth of a gram)

CHEMICALS AND UNITS OF MEASURE

°C	degrees Celsius
Ci	curie
cm	centimeter
CO	carbon monoxide
CO ₂	carbon dioxide
Co-60	cobalt-60
Cs	cesium
Cs-137	cesium-137
CsCl	cesium chloride
Cu	copper
dB	decibel
dBA	decibel A-weighted
°F	degrees Fahrenheit
ft	feet
ft ²	square feet
ft ³	cubic feet
g	gram
G	gravitational acceleration
gal	gallon
Gd	gadolinium
GWd	gigawatt-days
ha	hectare
H ₂	hydrogen
HF	hydrogen fluoride
HNO ₃	nitric acid
hr	hour
I-129	iodine-129
in	inch
k _{eff}	effective neutron multiplication factor
kg	kilogram
km	kilometer
km ²	square kilometer

Kr	krypton
kV	kilovolt
l	liter
lb	pound
m	meter
m ²	square meter
m ³	cubic meter
mCi	millicurie
mg	milligram
mi	mile
mi ²	square miles
min	minute
mph	miles per hour
mrem	millirem (one thousandth of a rem)
MW	megawatt
MWe	megawatt electric
N ₂	nitrogen
nCi	nanocurie (one-billionth of a Curie)
Ni	nickel
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
O ₃	ozone
oz	ounce
Pb	lead
PCB	polychlorinated biphenyl
pCi	picocurie (one-trillionth of a Curie)
PM ₁₀	particulate matter less than or equal to 10 microns
ppm	parts per million
Pu	plutonium
PuCl	plutonium chloride
PuO ₂	plutonium dioxide
rad	radiation absorbed dose
rem	roentgen equivalent man
RfC	Reference Concentration
RfD	Reference Dose

s	second
SO ₂	sulfur dioxide
Sr-90	strontium-90
t	metric ton
Tc-99	technetium-99
ton	short ton
U	uranium
U-233	uranium-233
U-234	uranium-234
U-235	uranium-235
U-236	uranium-236
U-238	uranium-238
UF ₆	uranium hexafluoride
UNH	uranyl nitrate hexahydrate
UO ₂	uranium dioxide
U ₃ O ₈	triuranium octaoxide
VOC	volatile organic compound
yd	yard
yr	year
µg	microgram (one-millionth of a gram)

METRIC CONVERSION CHART

To Convert Into Metric			To Convert Out of Metric		
If You Know	Multiply By	To Get	If You Know	Multiply By	To Get
Length					
inches	2.54	centimeters	centimeters	0.3937	inches
feet	30.48	centimeters	centimeters	0.0328	feet
feet	0.3048	meters	meters	3.281	feet
yards	0.9144	meters	meters	1.0936	yards
miles	1.60934	kilometers	kilometers	0.6214	miles
Area					
sq. inches	6.4516	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.092903	sq. meters	sq. meters	10.7639	sq. feet
sq. yards	0.8361	sq. meters	sq. meters	1.196	sq. yards
acres	0.40469	hectares	hectares	2.471	acres
sq. miles	2.58999	sq. kilometers	sq. kilometers	0.3861	sq. miles
Volume					
fluid ounces	29.574	milliliters	milliliters	0.0338	fluid ounces
gallons	3.7854	liters	liters	0.26417	gallons
cubic feet	0.028317	cubic meters	cubic meters	35.315	cubic feet
cubic yards	0.76455	cubic meters	cubic meters	1.308	cubic yards
Weight					
ounces	28.3495	grams	grams	0.03527	ounces
pounds	0.45360	kilograms	kilograms	2.2046	pounds
short tons	0.90718	metric tons	metric tons	1.1023	short tons
Temperature					
Fahrenheit	Subtract 32 then multiply by 5/9ths	Celsius	Celsius	Multiply by 9/5ths, then add 32	Fahrenheit

METRIC PREFIXES

Prefix	Symbol	Multiplication Factor
exa-	E	1 000 000 000 000 000 000 = 10^{18}
peta-	P	1 000 000 000 000 000 = 10^{15}
tera-	T	1 000 000 000 000 = 10^{12}
giga-	G	1 000 000 000 = 10^9
mega-	M	1 000 000 = 10^6
kilo-	k	1 000 = 10^3
hecto-	h	100 = 10^2
deka-	da	10 = 10^1
deci-	d	0.1 = 10^{-1}
centi-	c	0.01 = 10^{-2}
milli-	m	0.001 = 10^{-3}
micro-	μ	0.000 001 = 10^{-6}
nano-	n	0.000 000 001 = 10^{-9}
pico-	p	0.000 000 000 001 = 10^{-12}
femto-	f	0.000 000 000 000 001 = 10^{-15}
atto-	a	0.000 000 000 000 000 001 = 10^{-18}

**PAJARITO SCIENTIFIC CORPORATION, LOS ALAMOS, NM,
MICHAEL J. LAWRENCE
PAGE 1 OF 4**



Pajarito Scientific Corporation
278 DP Road
Los Alamos, NM 87544
Tel: (505) 662-4182
Fax: (505) 662-2786

April 11, 1996

J. David Nulton
Director, NEPA Compliance and Outreach
US Department of Energy
Office of Fissile Material Disposition
Post Office Box 23786
Washington, DC 20026-3786

Dear Mr. Nulton:

Thank you for the opportunity to comment on DOE's Draft Programmatic Environmental Impact Statement on the Storage and Disposal of Weapons-Usable Fissile Materials. In addition to my participation at the DOE's public meeting in Richland, WA on April 11, 1996, I would like to submit the following comments and write paper.

My comments are based upon twenty-four years experience with the US Department of Energy, six as Manager of the Hanford Site, four years with the US Department of State as Counselor for Nuclear Policy to the International Atomic Energy Agency in Vienna, Austria, and my current position as President/CEO of Pajarito Scientific Corporation in Los Alamos, New Mexico, a wholly owned subsidiary of British Nuclear Fuels Limited.

I strongly believe that the reactor option for plutonium disposition using mixed oxide fuel is the best course of action for the US to pursue. It has the following advantages over other options:

- It virtually destroys the weapons plutonium making it impossible to use for future weapons.
- It is consistent with the plans of Russia and other major nuclear countries.
- It is irreversible and, therefore, acceptable to non-nuclear weapons states party to the Nuclear Nonproliferation Treaty.

1/08.03.01

WA-023

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

PAJARITO SCIENTIFIC CORPORATION, LOS ALAMOS, NM,
MICHAEL J. LAWRENCE
PAGE 2 OF 4

• It can be fully accomplished based upon existing, proven technology. • It will generate revenues from power production to reduce the cost of plutonium disposition. BNFL has extensive experience in mixed oxide fuel production and can produce fuel from US excess weapons plutonium either in facilities at it's Sellafield plant or a new facility in the US, in full compliance with international safety and safeguard requirements. Several reactor options may be necessary to meet plutonium disposition requirements in a timely manner and BNFL is capable of providing fuel for multiple reactor types.	1/08.03.01 cont.
It is important that the PEIS acknowledge that the disposition of weapons usable fissile material is not a unilateral action, but part of an international obligation the US has made with Russia as part of last year's decision to indefinitely extend the nuclear non-proliferation treaty. The nuclear weapons states are committed to reduce their nuclear stockpiles and permanently render excess weapons material unusable for future weapons use. Non-nuclear weapons states, particularly from the lesser developed countries, are closely watching the actions of the US and Russia to see that we quickly and effectively follow through on our commitments. Prolonged storage or reversible disposition options are not acceptable. The burning of excess weapons plutonium is totally consistent with our international treaty obligations and should not be misrepresented as undercutting US nonproliferation policy. Reprocessing and recycle of commercial nuclear fuel for power production is a different and distinct issue which should be made clear in the PEIS.	2/01.03.00 3/08.03.01 4/06.00.09 WA-023

Sincerely,

Michael J. Lawrence

Michael J. Lawrence
President/ CEO

01 03 00 Comment Number 2

Comment noted. The timing and suitability of alternatives was evaluated in a separate nonproliferation analysis issued by DOE in late 1996.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

06 00 09 Comment Number 4

The Department of Energy agrees with the commentor's statement. The use of MOX fuel derived from surplus Pu does not involve reprocessing/recycling of Pu. All reactors are on once-through fuel-cycles and all the Pu has already been separated such that additional reprocessing is not involved.

PAJARITO SCIENTIFIC CORPORATION, LOS ALAMOS, NM,
MICHAEL J. LAWRENCE
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Plutonium Disposition: A Global Commitment And Responsibility

After nearly fifty years of producing tons of plutonium and highly enriched uranium, the United States and the Former Soviet Union are dismantling tens of thousands of nuclear weapons. These countries are faced with the task of ensuring that each other and to all Nuclear Nonproliferation Treaty signatories that this material will never again be used in nuclear weapons. The recent indefinite extension of the NPT would never have been possible without the commitment of the major nuclear weapons states to live up to their treaty obligations with the ultimate objective of eliminating nuclear weapons altogether. Despite its imperfections, the establishment of the NPT has provided the legal basis to detect and prevent nuclear proliferation, and its indefinite extension is a major accomplishment.

There is general agreement that excess highly enriched uranium can be blended down into low enriched fuel for use in nuclear power reactors. The blending process alone is considered adequate to render the uranium unusable for nuclear weapons since the enrichment needed to return the blended material back up to weapons grade, is the same for either fresh fuel or blended weapons uranium. Plutonium disposition options however are not readily agreed to. Since there is no ready supply of non weapons plutonium (such as plutonium 240) which could be used to dilute and denature plutonium, and even reactor grade plutonium can be fashioned into a crude nuclear device, a blending approach similar to uranium is not considered acceptable.

Plutonium can be made into power reactor fuel and burned up in a reactor. Ample experience exists in the fabrication and use of mixed oxide fuels containing plutonium. While the economics of using mixed oxide fuels are not considered favorable, at least by the U.S. and especially in the near term, several countries use or plan to recycle plutonium as a matter of strategic national policy. While the United States has no such policy or strategy, Russia does plan to recycle plutonium both from spent fuel and excess weapons. The United Kingdom, France, Japan, China and several other Western European countries also support plutonium recycle.

The United States plans on direct disposal of spent power reactor fuel. Direct weapons plutonium disposal in a geologic repository in a glass form is under consideration. This would be difficult to recover and would be inaccessible for diversion except under extreme and easily detected means. It is questionable however if it would satisfy the requirements of other countries since it is reversible. If Russia is physically destroying their excess plutonium they are not likely to settle for anything less on the part of the United States. Even if the United States could convince Russia not to recycle but to store and dispose of vitrified plutonium, it is questionable if the non nuclear weapons states would be agreeable.

The burning of plutonium in the United States would create a number of problems. First, it is not part of fuel cycle plans for commercial reactors. The regulatory basis and facilities, both fuel fabrication and reactors, to enable plutonium burning to occur would have to be provided. There is no current economic or energy driving force for U.S. plutonium utilization and there is substantial public opposition. But the objective of

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MICHAEL J. LAWRENCE
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plutonium burning would not be wide scale commercial utilization of plutonium for power production, but the destruction of excess weapons plutonium so that this material could never be used in nuclear weapons. Facilities to dispose of the plutonium under any option, including vitrification, would have to be provided with the accompanying regulatory requirements and environmental impacts and risks. Both options, burning or disposal, would require tight government control and security as well as international safeguards by the International Atomic Energy Agency.

Given these considerations, the burning of plutonium has the advantages of *first*, destroying plutonium and making it impossible to use for future weapons; *second*, being consistent with the plans of Russia and other major nuclear countries; *third*, being irreversible and therefore, acceptable to other non nuclear weapons states; *fourth*, can be accomplished based upon existing technology and *fifth*, power produced as a by product of burning can be used to offset some of the costs of plutonium destruction.

There are several locations in the United States where plutonium burning could be performed. It would be desirable to choose a location that would minimize transportation, further plutonium contamination, and new facility construction.

Independent regulatory control should be required and international safeguards by the IAEA are essential. The pace at which the plutonium is destroyed, in my opinion, is not as important as beginning to make a start on the destruction.

The Hanford Site has the facilities and experience to burn excess weapons plutonium in the next five to ten years but radically strengthened oversight and controls would be necessary. Other sites also have many of the same capabilities. Washington State has borne a large portion of the impact, both negative and positive, from past plutonium production. It has the capability to also play a major role in the solution to the plutonium disposition problem.

Regardless of which plutonium disposition option is chosen, and which location is selected, the United States has international obligations to greatly reduce its nuclear stockpile and permanently render its excess weapons material unusable for future weapons use. The U.S. cannot unilaterally select which option it will pursue, but must meet the approval of Russia and the international community. Strict safety regulation by an independent authority and safeguards by the IAEA are a prerequisite. The benefits from promptly and permanently beginning to destroy excess nuclear weapons material are too great not to pursue with the same determination and urgency as the Manhattan Project.

Michael J. Lawrence
September 25, 1995

Presented at the Plutonium Roundtable: Risks and Solutions
Tri-Cities and Seattle, Washington
October 5 - 7, 1995

WA-023

PANGBORN, SALLY MACARTHUR, SEATTLE, WA
PAGE 1 OF 2

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional): Sally MacArthur Pangborn *Don't need anything separate*
Address (optional): 2917 35th Ave. E *mailing address to be notified*
Seattle, WA 98112-5931 *if meeting in Seattle.*

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, D.C. 20026-3786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department also considered two other options for disposing of weapons-usable fissile materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.

Don't need anything separate
2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.

Don't need anything separate
3. Reactor Options - Surplus plutonium/fissile enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.

Don't need anything separate
4. Storage Options - USDOE would continue existing storage practices for weapon-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.

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PANGBORN, SALLY MACARTHUR, SEATTLE, WA
PAGE 2 OF 2

Please use this space to write down any additional comments on the Storage and Disposition
of Weapons-Usable Fissile Material Draft Programmatic Environmental Impact Statement.

I really don't know what phrase is the best. It is
any judgement opinion that we have the best of the
that and really don't know what to do. First, we should
try to get the Department of all the countries that
do, unless it is a new problem and try to agree
on the procedure to follow.
If we could lead the way to a super energy source,
help other countries to produce and do away with the
nuclear that is so expensive and dangerous for future
and be safe. I want to see the best of nuclear power.
We have some ideas to see the picture in our eyes. We have
it at our hands to say but I do feel we should
continue to see it. It is so dangerous and expensive.
The goal should be to see a safe, efficient and cheap.
Big companies should not make the policy.
If we are international problem and want to do it with
internationally. The big companies should not be
recommended by federal use of a system that is easily
and that has created so many problems - Chernobyl,
3 mile island, Bhopal, Seveso, etc., etc.
It is a new situation with many about big nations,
profits, jobs, etc. It's got rid of the waste, and better
and and and and and and and and and and and and and and
for the rest of the world to follow. There is an
international problem and it must be dealt with
internationally.

Sally MacArthur Pangborn
Seattle

1/08.03.01

2/01.00.00

M-232

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the
Reactor Alternatives. However, NEPA requires that DOE look at all
reasonable alternatives and, therefore, reactor burning must be considered.
Decisions on the disposition of weapons-usable fissile materials will be based
upon environmental analyses, technical and economic studies, national policy
considerations, and public input.

01 00 00 Comment Number 2

The Department of Energy has the responsibility to implement the President's
Nonproliferation Policy by finding a path forward for the disposition of
surplus weapons-usable Pu which is not wasteful. Disposition of this Pu
would generate wastes and spent nuclear fuel. Operation of the disposition
facilities would meet applicable regulations and standards, and external
regulatory oversight would be used as appropriate. Previous incidents at
Chernobyl and other locations would be used as lessons learned to prevent
reoccurrence.

PANHANDLE 2000, AMARILLO, TX,
JERRY JOHNSON AND WALES MADDEN, JR.
PAGE 1 OF 12



May 2, 1996

U.S. Department of Energy
Office of Reconfiguration
P.O. Box 3417
Alexandria, VA 22302

U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, DC 20026

Re: Public Comment on the Department of Energy's Stockpile Stewardship and Management (SSM), Storage and Disposition (S&D) of Weapons-Usable Fissile Materials, and the Pantex Site-Wide Draft Programmatic Environmental Impact Statements (PEISs).

Dear Sirs:

Thank you for the opportunity to comment on the U.S. Department of Energy's (DOE) Draft Programmatic Environmental Impact Statements (PEISs) on Stockpile Stewardship and Management (SSM) and Storage and Disposition (S&D) of Weapons-Usable Fissile Materials, as well as the Pantex SWEIS. Also, please consider this our comments on the Pantex Site-Wide Environmental Impact Statement (SWEIS).

As we explained in our communication on these subjects during the past few years, we were appointed by the City Commission of the City of Amarillo, Texas, on February 8, 1991 to co-chair Panhandle 2000, a group of Amarillo-area citizens interested in the environmentally sound retention and expansion of Pantex. We were also requested to organize community support for Pantex. Ours is a broadly representative organization of individuals and entities who reflect the strong support of the vast majority of area residents for DOE's work in the Texas Panhandle at Pantex.

The issues addressed in the three Drafts are of paramount concern to the people sharing the Texas Panhandle with the Pantex Plant and the DOE. The dramatic employment reductions forecasted in the Draft SSM PEIS will severely impact the Panhandle economy. While Pantex is willing to participate, if necessary, in efficient downsizing of the nuclear weapons complex, any reductions at Pantex should come only after intensive cost and technical analyses to assure that national security needs are still being met in a cost-effective manner.

M-123

Ensuring confidence in the United States' nuclear stockpile and the safety and reliability of the nation's nuclear deterrent are vital issues that have been addressed by activities at the Pantex Plant for over forty years. As neighbors to the plant, we are very aware, and proud, of the critical role that Pantex plays in fulfilling our nation's goals for defense and energy needs. We look forward to maintaining a vital role in meeting our present and future national security needs.

The Administration's proposals to disseminate current Pantex functions to other sites seems certain to adversely affect the nation's ability to produce nuclear weapons in the future, and to dangerously weaken national security. This is reflected in the SSM PEIS's workload assumptions of 1,000 warheads in the future stockpile, a number far lower than even the 3,500 set in still-unratified START 2 treaty. We urge you to recognize the importance of DOE's production complex, and avoid surrendering the victory we gained in the Cold War through the planned obsolescence of our production capability, which can only be rebuilt at great cost in later years.

As DOE presses toward its Record of Decision regarding SSM and S&D functions, we find it necessary to begin with a summary of the existing facilities Pantex possesses which would require minimal upgrading to meet many of the needs presented in the Drafts. The following table presents the list of existing facilities that are available for particular stockpile management and plutonium storage missions:

Capability	Facilities
1. Weapons assembly/disassembly	Existing facilities in Pantex Zone 12
2. Nonnuclear components	Existing facilities with modifications
3. Nuclear components:	
a. Pit storage	Existing facilities with modifications
b. Pit reuse (minor)	Existing facilities in Pantex Zone 12
c. Replacement pit fabrication and reuse (major)	Existing facilities with modifications
d. Secondaries and cases	Existing facilities in Pantex Zone 12 with modifications
4. High explosives components	Existing facilities in Pantex Zones 11 and 12

Keeping this in mind, please consider the following comments on plans for the Complex as DOE prepares its final drafts on upgrading and/or downsizing facilities at the sites where Stockpile Management capabilities are located, and where Stockpile Storage and Disposition missions are contemplated.

I. SSM PEIS.

A. Assembly/Disassembly Functions at Pantex, and Strategic Reserve Storage.

We are pleased DOE selected Pantex as the preferred alternative for assembly/disassembly (A/D) functions, abandoning earlier, cost-prohibitive plans to

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

transfer these functions from Pantex to the Nevada Test Site (NTS). Pantex's demonstrated experience and strong safety record, as well as the monumental costs associated with recreating A/D facilities elsewhere, make Pantex the ideal site in maintaining these functions.

Further, DOE mentions that strategic storage should be co-located with disassembly, but does not emphasize the protection of those reserves to meet future national security needs. Pantex should be the preferred site for such a mission in coordination with its stewardship functions. Parenthetically, Pantex should be selected for all S&D storage functions. It makes no sense from any perspective, budget or otherwise, to site strategic storage at one site and surplus at another.

1/08.03.01

Just as maintaining core scientific competencies in the three national laboratories will help ensure the safety and reliability of a smaller stockpile, *maintaining the core production competencies of Pantex* (the sole authorized site for weapons assembly) will ensure our ability to meet future national security needs for stockpile assembly and disassembly. Pursuing complete unilateral disarmament would run contrary to stated national security objectives. Absent total disarmament, we must maintain an assembly infrastructure capable retrofitting aged weapons and assembling new weapons as needed in the future. While DOE plans no new construction at the existing plant, Pantex should be considered for upgrading and/or new construction to prepare for these nuclear weapons production needs.

Finally, in its deliberations, DOE should insist that *budgetary comparisons between Pantex and other sites are accurate, and include capital, transportation, training, remediation, security, and other costs.*

B. High Explosives Fabrication at Pantex.

While we are pleased with Pantex maintaining A/D functions, we are very concerned that DOE did not name Pantex as the preferred site for continuing high explosives fabrication. In conjunction with the A/D functions, it is necessary to maintain HE fabrication at the corresponding site; thus, these functions should remain at Pantex.

The Draft SSM PEIS implies that Pantex would keep HE functions should it retain A/D functions. Since DOE intends to keep A/D at Pantex, Pantex should also retain HE fabrication. In any event, because of ongoing disassembly work at Pantex, DOE admits the plant "would have to retain disposition and disposal capability for the HE inventories currently on site and those expected from near-term weapon dismantlement regardless." In addition, should future needs arise for weapons production, it will be critical to have the HE facilities at the weapons production/assembly site.

If establishing core competencies at the labs are so important for high explosives, why is it not so for uranium functions? DOE has made it clear that in the instance of HEU, maintaining core competencies at the production site is a priority. Why not so for HE?

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We adamantly disagree with the statement in the draft PEIS that there is no significant cost benefit to siting HE at Pantex as opposed to the national labs. Earl Whitman of DOE's Albuquerque Field Office admitted in the April 23 PEIS hearing that it would be more expensive to relocate HE to LANL and LLNL, but he attempted to justify this saying it was "only for a one-time cost." This analysis raises serious questions as to the criteria used to determine the cost considerations for this and other transfers. The capital outlay alone necessary for transfer is admittedly cost-prohibitive; and while transferring HE functions may be less expensive than transferring other functions, the least expensive alternative is to maintain those functions at Pantex. DOE appears to be overlooking or ignoring other glaring considerations like the upgraded facilities and trained personnel at Pantex versus those present (or, more accurately, absent) at the labs. The assertion in the Draft SSM PEIS that it might be cheaper to transfer HE to the labs than it would be to downsize at Pantex is fantastic and defies logic since transfer would still ultimately require some duplication of facilities. In order to reach such a conclusion, one must assume that capital, training, and other costs are not taken into account. Incredibly, the Draft SSM PEIS assumes that the labs, which have failed in every instance to successfully implement any production on the magnitude necessary to meet national security needs, could for the first time accomplish this with high explosives. At the public hearings, Mr. Whitman admitted that Pantex has both capabilities necessary for high explosives work (the quality assurance component), while he labs only have one (the ability to "press" explosives, but at a level which does not match Pantex). Finally, DOE must account for the costs and safety risks associated with transportation of high explosives components between the labs and Pantex. There is no justifiable reason for initiating the unnecessary costs and increased risks associated with transferring HE functions to the labs.

C. New construction/stewardship activities at Pantex.

Until recently, DOE concentrated research and development functions at the labs and production functions at the industrial sites. It appears DOE is headed in a new direction. While the drafts propose to continue concentrating all stewardship functions and to transfer particular industrial functions to the labs, i.e. DOE overlooks the potential for Pantex to perform new stewardship functions complementary to its current management functions. The scientific, technical, and managerial competence presently at Pantex, combined with additional technical resources from Mason & Hanger, Bartelle, and the Higher Education Consortium, offer the human and material resources necessary for the future needs of the SSM Program.

Pantex has the necessary resources, with the required safeguards and security, to meet the goal to downsize and/or consolidate facilities while providing an effective and efficient production capability for a smaller stockpile. Facilities are currently in place to perform almost all the necessary mission elements of the stockpile management program, a fact that should not be overlooked as the DOE seeks to preserve the integrity of the nuclear stockpile under increasing budgetary constraints.

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The obvious advantage of Pantex is, by utilizing the facilities already in place, DOE could eliminate the capital cost for establishing the same capabilities elsewhere. The cost of unnecessarily duplicating facilities (*currently in place at Pantex*) at another site would cost the DOE tens of millions of dollars in infrastructure alone, notwithstanding the additional expense of related transportation, environmental remediation, start-up and training costs required at a redundant site which would cost taxpayers additional millions of dollars.

Another fact that should not be overlooked is that Pantex is the candidate site located nearest to the LANL, the preferred site for the Atlas facility, and the planned site for plutonium pit fabrication. This facility is key to DOE's ability to address stockpile reliability and safety issues by means other than nuclear testing due to the indefinite extension of the nuclear testing moratorium in July 1993. The conclusion to be drawn is that the location of SSM Program functions at Pantex would not only take advantage of current storage and dismantlement capabilities, but would also capitalize on the geographical proximity of Pantex and LANL that would be conducive to the exchange of technological information necessary for effective management of a smaller nuclear weapons complex.

In addition to Pantex, the Texas Panhandle also boasts of the Amarillo National Resource Center for Plutonium (ANRCP) which is taking a lead role in environmental and nuclear research. The ANRCP is operated by the Higher Education Consortium, comprised of three of the nation's preeminent university systems (The Texas A&M University System, Texas Tech University System, and The University of Texas System). Consistent with the SSM Program non-proliferation objectives, the Consortium is coordinating the U.S.-Russian Summit Working Group on the Disposition and Accumulation of Fissile Materials in order to ensure that the nation's arms-control objectives are met. The involvement of the Consortium adds an academic dimension of research excellence and third party monitoring that ensures continued competency of the people who must make the scientific and technical judgments related to the safety and reliability of nuclear weapons. We want to stress that we view the role of the ANRCP as complementary to the labs, and supplementing, not supplanting, their functions.

The Consortium and the development of the ANRCP are logical extensions of the current allocation of functions within the U.S. nuclear weapons complex. In light of continuing changes in the national security picture for the U.S., and given the importance of resolving dismantling issues and issues related to the future stewardship of the nuclear stockpile, the *siting of research and technical functions at Pantex for the SSM Program is highly appropriate.*

The significant nuclear stockpile still present in the former Soviet Union under sometimes suspect surveillance makes our continued cooperation with Russia regarding management of the nuclear stockpile critical to international security. The key role the

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The issue of strategic reserve, as it relates to national security needs, is addressed in the Stockpile Stewardship and Management PEIS.

Amarillo National Resource Center for Plutonium is playing for DOE in SSM and fissile materials activities with Russia argue for an expanded role for Pantex.

Accordingly, it is appropriate to consider Pantex as an alternative site for future defense missions. The location of new activities at Pantex would ensure that core technical capabilities are preserved at a location that can secure them at the most efficient cost to the American taxpayers.

II. S&D PEIS.

A. Fissile Materials/Plutonium Storage and Disposition at Pantex.

In addition to DOE's hesitation to name a preferred site for HE, we are also concerned that the Draft S&D PEIS did not list a preferred site for plutonium storage and disposition. Whether the decision reached is for "No Action" or "Consolidate," plutonium will continue to be present at Pantex through assembly/disassembly operations. President Clinton last year announced that he was declassifying 38.2 metric tons of weapon-grade plutonium as excess to national security needs. Of that amount, 21.3 metric tons are located at Pantex. For this reason alone, Pantex should be the preferred site for storage, disposition, and utilization. Doing so would avoid the economic and other attendant costs of transporting plutonium to a new site as well as the massive infrastructure costs of unnecessarily recreating a Pantex-like facility at another site.

1. Storage.

As aforementioned, Pantex is already safely storing most of the weapons-usable surplus plutonium from the dismantled stockpile. Pantex presently has more than 8,500 plutonium pits stored on site and can easily be expanded to hold more than 20,000. We fully support the proposed action in the SWEIS to expand Pantex's storage capabilities to 20,000 pits. The plant is also scheduled to be upgraded to prepare the storage bunkers for receipt of plutonium pits relocated from Rocky Flats. This will increase further the plutonium stockpile present at Pantex.

One major concern is, as it is currently drafted, the S&D PEIS does not emphasize a continuation of the Strategic Plutonium Reserve necessary to meet continued national security needs. Once again, storage of the strategic reserve is a logical mission at Pantex as an extension of its assembly/disassembly functions and long-term plutonium storage consideration. Neither the SSM PEIS nor the S&D PEIS takes the logical next step by naming Pantex as the site for storage of strategic and surplus plutonium. At the hearing, Earl Whitman of DOE said at the hearing "it made sense" to collocate strategic storage and assembly/disassembly to minimize transportation, and to collocate strategic storage with surplus storage, since the strategic stockpile may be declared surplus at some point. Mr. Whitman said that Pantex has a facility which is "exactly the right size" for strategic storage, and that there was sufficient space at Pantex for all functions. DOE should not

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Comment Number 3

01 03 00

Comment noted.

only recognize that storage should follow disassembly, but also that certain disposition options should follow storage to minimize transportation and other costs. It is important that a stockpile of strategic reserve remain a stated objective of S&D functions included in either plutonium storage or pit fabrication duties. Since Pantex also is in close proximity to LANL, the preferred site for pit fabrication, designating Pantex as the alternative site for a strategic reserve would be the most cost-effective choice.

With regard to storage, the focus should be squarely on the issue of storing the pits safely, and we fully support storage of plutonium and other fissile materials at Pantex under both the "no action" and "long-term" alternatives, given adequate assurances that such storage is safe and environmentally sound. In addition to extensive environmental safety protections already in place, Pantex has built an elaborate security system to protect stored plutonium from potential theft. Safe storage is critical for maintaining the integrity of the stockpile and our commitment to international safety. Pantex is the only site currently capable of this level of protection to prevent possible proliferation of stolen weapons-grade plutonium.

Ensuring safety and accountability of our surplus plutonium stockpile can best be accomplished through the construction of a new consolidated storage and staging facility at Pantex. Such a facility would:

- Strengthen national and international arms control efforts by fostering continued and enhanced cooperation with Russia on transparency issues, and bilateral agreements to monitor dismantlement and maximize options for the disposition of surplus weapons-usable fissile materials;
- Ensure that storage and disposition of weapons-usable fissile materials is carried out in compliance with environment, safety, and health (ES&H) standards;
- Consolidate all nuclear materials which would provide significant cost savings for surveillance, storage, and disposition.

Siting a new consolidated storage facility at Pantex also would further the "stored weapons standard" which envisions the same high standards of security and accounting applied to storage of nuclear weapons being maintained for weapons-usable fissile materials throughout the process of dismantlement, storage and disposition. Pantex has put in place, and is accustomed to maintaining, the high security and accounting standards for nuclear weapons storage for decades as the Complex' sole site of disassembly.

Siting long-term storage at Pantex also will help us achieve the Administration's nonproliferation goals. No current treaty requires us to disassemble nuclear warheads, but only to disable the delivery vehicle; the warheads can remain intact under treaty, and the U.S. is disassembling voluntarily and unilaterally. If the U.S. is to serve for reciprocity, and encourage Russia and other countries to "go the extra mile" and disassemble nuclear arms as opposed to merely "dismantling" them, Pantex, being the sole U.S. site for disassembly, would be the consummate site for storage of fissile materials.

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We disagree with DOE's findings that under either the "No Action Alternative," or the "Long-Term Storage and Disposition Alternatives," that Pantex has the greatest potential to experience adverse cumulative impacts. This conclusion is almost wholly based on what DOE terms as the "small, compact area" in which Pantex is sited. This conclusion fails to take into consideration the fact that DOE already owns the 10,000 acres on which Pantex is located, and that more land is available for any new or upgraded facilities, at no cost to the federal government. Further, Pantex is located 14 miles from a central city, the finding that cultural, socioeconomic (such as level of road service in the event of construction), and public and occupational health and safety impacts would be greater at Pantex is incorrect. For example, to imply that interstate transportation impacts would be greater at Pantex is absurd, since (1) Pantex currently houses the vast majority of plutonium pits, thus avoiding the lion's share of any transport (and the attendant budgetary, environmental, and political costs related thereto) if it was selected as the preferred alternative for S&D; and (2) is the site closest to LANL, the proposed site for pit fabrication. Even if one were to accept such a finding regarding Pantex, the differences between candidate sites would be so small to demand that they not be seriously considered as an accurate or meaningful criterion on which to base selection.

If DOE chose not to construct a new consolidated storage facility, we would support the upgrade of Pantex storage capability necessary to comply with current design and environment, safety, and health requirements.

2. Disposition Alternatives.

DOE has not yet decided on the preferred alternative for disposition or the sight for disposition, but whatever decision is reached, Pantex should be the preferred site since it is already the current storage site for plutonium removed from dismantled weapons and the site of strategic plutonium reserve.

While the implementation of any disposition option must be environmentally sound, the ultimate decision of which options will be chosen will be based largely on national security considerations, especially the success or failure to reach accord with Russia on these issues.

While the U.S. should take any unilateral actions it deems appropriate if its national security interests are maintained, the volatility of the former Soviet republics and the changing world scene dictate that reciprocity guide our actions. The Draft S&D PEIS identifies three major alternatives as reasonable for plutonium disposition: immobilization in glass or ceramic form; burning in reactors as MOX fuel; or deep burial in boreholes either directly or in immobilized form.

How do these options fit into reciprocity? The White House Fact Sheet on Nonproliferation contains the policy statement that the U.S. should "seek to eliminate...the accumulation of stockpiles of...uranium and plutonium," including those from civil nuclear

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Comment Number 4

Based on comments received, the Summary was revised. The bar charts providing the comparison of impacts for both storage and disposition were deleted from the Summary. The related text was revised to clarify the comparison of impacts and to delete reference to "adverse" impacts. There was no intention to portray Pantex, the Pantex region, or the Texas Panhandle region in a negative fashion. Each DOE site was analyzed and studied in the same manner and presented in the Draft PEIS accurately per these analyses and studies. The cumulative impact analysis in Section 4.7 does not attempt to rank the potential for cumulative impacts at the sites. The Summary has been revised to better reflect the cumulative impact analysis in Section 4.7.

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Comment Number 5

The Pu material at Pantex, as well as Pu and HEU at the other five sites, was assumed to be present for the transportation analysis. For the storage alternatives, Table 4.4.3.2-2 of the Draft PEIS indicates Pantex would have the lowest number of potential fatalities. For disposition, almost all surplus pits were assumed to be at Pantex. This is indicated by Pantex having the lowest number of potential fatalities for pit disassembly in Table 4.4.3.3-1 of this PEIS.

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Comment Number 6

The Department of Energy acknowledges the commentor's support for the Upgrade Storage Alternative. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 03 00

Comment Number 7

The PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD. The cost, schedule, and technical analyses were made available for public review beginning in July 1996. The nonproliferation

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programs. It is unrealistic to believe that any disposition decision by the U.S. which does not contemplate the use of plutonium as fuel will cause other countries - either with or without nuclear weapons - to abandon the use of plutonium in reactors. For example, Russia, with its large investment in its nuclear infrastructure, and its lack of financial means to convert to other forms of energy, is highly unlikely to forego the use of nuclear power, including the use of plutonium. Also, European nations like France, which lack the vast natural resources of oil, gas, and coal which the U.S. enjoys, have little incentive to give up their reliance on nuclear power. If that is the case, and in full recognition that reactor-grade plutonium can easily be used in weapons, the U.S. will be compelled for "reciprocity" and national security reasons to maintain plutonium in pits for some period of time and plan to utilize it through the mixed oxide fuel option. The U.S. cannot lead by posing unacceptable or unfeasible options; it must recognize the circumstances which it and other nations face, and pursue a course which will benefit its national security goals, and possibly other goals as well.

We are not convinced that plutonium is more of a liability than an asset. Why can't we make swords into plowshares, and utilize these resources - which took so much time, effort, and money to develop - and examine the peaceful uses of these materials? Examination of possible beneficial uses is one of the primary purposes of the research being conducted at DOE research facilities across the country. We strongly support, as part of this research, the review of long-term options for plutonium disposition, including environmental considerations. This review can involve research and policy study on the best forms of plutonium for storage, disposition, and utilization, storage options, security and safeguards and other issues.

Further, we believe that this option, with its emphasis on education and research, will help reverse the "brain drain" which could adversely affect the Nuclear Weapons Complex as its primary function changes. The Defense Nuclear Facility Safety Board has said that the government is losing most of its veteran experts. While DOE has attempted to address this problem through instituting a program to attract new young scientists to the Complex, we believe that more young scientists will have the incentive to develop and maintain expertise in these disciplines if the types of serious research which the "beneficial use" option offers is available through DOE.

The questionable efficacy of the "irreversibility" of vitrification or boreholes argues for use in reactors, at least for pits and other "MOX-able" plutonium. While we recognize that some plutonium "scrap" can only be disposed through avenues other than MOX, the extraordinary advances in science, especially in this important area, render naive the notion that sometime in the near future the technology to "reverse" vitrification, boreholes, or any other such "waste generating" process will be readily available to those who desire it.

Accordingly, we support a course which will provide a tangible demonstration to the affected citizens that there exist long-term disposition options which both fit our national security interests as well as a common sense desire to reap a beneficial use from these materials. The Administration should consider a joint program between Russia and

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analysis was made available to the public beginning in October 1996. DOE also conducted a series of public meetings, prior to the issuance of the Final PEIS, to discuss the analysis on the Nonproliferation Policy as it relates to the Proposed Action and alternatives.

01 06 00 Comment Number 8

Comment noted.

08 03 01 Comment Number 9

The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

the U.S. (and perhaps other countries) which actually would take a plutonium pit apart, make plutonium oxide, fabricate mixed oxide fuel, and burn the fuel in a commercial light water reactor.

Such a policy would meet the "spent fuel standard" by making the plutonium as inaccessible for weapons use as the plutonium in spent nuclear fuel from commercial power reactors. It also recognizes the fact that the only course to safe disposition is to separate the atom through fission. It also looks beyond the spent fuel standard by maximizing the options available to DOE and the Administration with regard to disposition.

3. Environmental Safety and Health Criteria.

a. Airplane Crash Risk Analysis:

The 1994 "Finding of No Significant Impact" arising from the Environmental Assessment found an airplane crash/accident occurring at Pantex to be an "incredible event" not justifying the preclusion of additional storage at Pantex. Even so, the plant subsequently worked with the Department of Defense and the FAA to reduce flights over Pantex, and took other steps to ameliorate the situation. However, the Draft SWEIS does not account for the reduced flights thereby exaggerating the probability for airplane accidents at Pantex and their resulting impacts, and, incredibly, *increases* the probability of a crash from the 1994 "FONSI." In the recent hearings, Nan Founds responded to this concern by saying that DOE is formulating its own analysis not dependent on FAA data, but also stated there were serious problems with DOE's analysis, which would be addressed. In its initial analysis, DOE is ignoring not only credible work already completed, but also the obvious reduction in accident potential for use in determining the ES&H of siting new functions at Pantex. This undermines the perceptions for fair and equal criteria for use in accurately comparing the various sites under consideration. We urge DOE to correct the analysis and avoid the wrongful preclusion of Pantex for consideration of additional functions.

10/09.09.04

b. Environmental Impacts of Potential Increased S&D Functions:

In the Draft S&D PEIS, DOE characterizes Pantex as having the "greatest potential" to experience adverse cumulative impacts from an increased role in plutonium storage and disposition. However, this characterization is way beyond the means of DOE's cursory analysis. NEPA regulations require that environmental impact statements discuss "significant" impacts and support these with evidence. DOE has taken license to ignore these regulations by discussing potentiality and susceptibility without basing these in fact. We object to this type of characterization which unfairly and inaccurately misrepresents Pantex's ability to handle an increased role in S&D. These conclusions also totally contradict those contained in the SWEIS which characterize the impacts as "minimal" and "negligible." It is imperative that DOE correct the inaccurate mischaracterizations before making its final decisions for plutonium storage and disposition missions.

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09 09 04 Comment Number 10

Appendix R has been added to the Final PEIS to discuss aircraft crash and radioactive release probabilities for proposed storage and disposition facilities at Pantex.

01 00 00 Comment Number 11

Based on public comments, the Summary of the Draft PEIS was revised. All revisions appear in the Summary of the Final PEIS.

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4. Cost savings due to avoidance of transport of special nuclear materials.

Regardless of the final decision for storage and disposition, DOE must make accurate budgetary comparisons as a primary consideration in its analysis of where to site these functions. *DOE should insist that budgetary comparisons between Pantex and other sites are accurate, and include capital and transportation costs, and also take into consideration the political consequences of transfers from Pantex.* We also urge DOE to compare on a "side-by-side" basis all six candidate sites for: (1) Conduct of operations; (2) Implementation thereof; (3) Security; (4) Relationship between management, unions, community; (5) Quality system programs; (6) OSHA/ ES&H envelope; (7) Engineering systems; (8) Radiation safety; (9) Applied technology; (10) Training programs; (11) Explosive and nuclear safety programs; and (12) Employee involvement in daily operations.

Accurate comparisons between all sites under consideration should once again make Pantex the preferred site. Maintaining and expanding the interim storage facilities at Pantex would all but eliminate the significant transport costs, and the attendant environmental and political risks involved with moving these functions to another site. Eliminating the unnecessary transportation of radioactive materials, will translate into less cost and greater public safety and protection. Ignoring or miscalculating the risks and costs associated with weapons materials would be a serious omission.

We are confident that any fair comparison of economic and political costs will favor Pantex over the other sites included in consideration, since recreating this infrastructure at another site would be cost-prohibitive.

5. Economic factors.

Pantex is perhaps the most cost-effective alternative for any new construction of SSM and S&D facilities if DOE pursues that course. First, labor costs are low. The existing work force in the Amarillo area has the skills necessary to meet the construction and operation requirements for any new functions and to do so at highly competitive wage rates. With a civilian labor force of 110,200, the Amarillo Metro Area can provide the project with a large, well-educated, and comparatively inexpensive labor pool. Average wage costs for manufacturing employment in Amarillo are 18% below the national average. Second, utility costs are highly competitive. According to the Utility Data Institute, the SPS industrial rate currently ranks in the lowest 11 percent among U.S. investor-owned utilities. SPS has a long history of low rates and presently offers the lowest rates among investor-owned utilities in Texas. If new facilities were operational now, SPS's standard rate for this class of firm service at 80 percent load factor would average 3.2 cents per kWh. Also, land to house new construction is readily available. The Department of Energy presently owns the 10,000 acres on which the Pantex plant is located. More land is available for any new facility, at no cost to the federal government.

07 00 00 Comment Number 12

Comment noted.

09 08 04 Comment Number 13

Selection of the Preferred Alternative for the Storage and Disposition PEIS was based on numerous factors, including socioeconomic. All of the candidate sites identified in the PEIS are considered reasonable alternatives for long-term storage. The site selection reflected in the Preferred Alternative is based, in part, on the ability of DOE to use the available work force and the existing infrastructure to minimize the cost of implementation.

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Finally, the City of Amarillo has excess water capacity to an extent enjoyed by no other candidate site, without depleting the Ogallala Aquifer.

6. Public and political support.

In addition to the economic factors listed above, local support for the Pantex Plant, and its expansion, is extraordinarily strong. A Shipley and Associates poll of the four county area surrounding the plant (Armstrong, Carson, Potter, and Randall) found that 99% of the respondents believe that Pantex is important to the local economy. 88% said that Pantex is a facility that they can be proud of, 79% favored Pantex expansion, and 88% agreed that Pantex is safe. In May 1991, a Lance Tarrance poll showed that 85% of area residents supported an expanded Pantex. Also, a July 1991, poll conducted by the Amarillo Globe-News showed that almost 75% of the respondents favored expansion of Pantex. Consideration of the results of the 1991 Tarrance poll (Republican) and the Shipley poll (Democratic) reveals that regardless of party affiliation of the pollster or time the poll is conducted, Pantex enjoys the overwhelming support of Panhandle residents, at a level perhaps unsurpassed by any other Complex site.

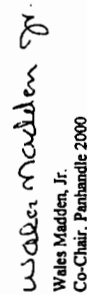
Area and state elected public officials are virtually unanimous in support of current and expanded plant operations. Essentially the entire, 32-member, Texas Congressional Delegation has pledged support for expansion and will be active in the effort in the future, as well as the Governor, Lieutenant Governor, area legislators, and other public officials. Thus, the message is clear from the nation's elected representatives that the role that Pantex plays in the future of the weapons complex is vital to the nation's nuclear deterrent and the safety and reliability of nuclear weapons.

III. Conclusion.

On all accounts, Pantex clearly is the best and most cost-effective alternative to DOE for stewardship and management, storage and disposition, and other defense-related missions. We respectfully urge DOE to designate Pantex as the preferred alternative site for all existing and new functions in DOE's Final PEIS and Records of Decision. Thank you for the opportunity to share our thoughts and concerns with you.

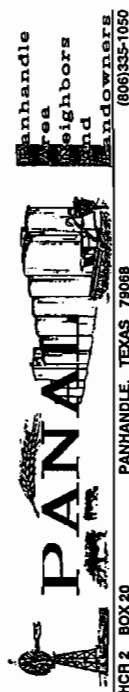
Yours truly,


Jerry Johnson
Co-Chair, Panhandle 2000


Wales Madden, Jr.
Co-Chair, Panhandle 2000

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PANHANDLE AREA NEIGHBORS AND LANDOWNERS,
 PANHANDLE, TX, DORIS AND PHILLIP SMITH
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HCR 2 BOX 20 PANHANDLE, TEXAS 79068
 June 6, 1996

Mr. J. David Nulton
 U.S. Department of Energy
 Office of Fissile Materials Disposition, MD-4
 Forrestal Building
 1000 Independence Ave., S.W.
 Washington, DC 20585

Re: Storage and Disposition of Weapons-Usable Fissile Materials
 Draft Programmatic Environmental Impact Statement

Dear Mr. Nulton:

Our grassroots group of Panhandle Area Neighbors and Landowners (PANAL) believes very strongly that this document is inadequate in so many ways. In light of this and in addition to our endorsement of the May 6 letter to Secretary of Energy Hazel O'Leary, requesting that DOE produce an adequate draft PEIS after all our concerns have been addressed, we submit the following comments.

The document lists reasonably foreseeable future actions that have the potential to be implemented at Pantex as: Long-term Storage and Disposition Alternatives, Waste Management Alternatives and Stockpile Stewardship and Management Alternatives.

As is stated numerous times throughout the document, "Pantex has the greatest potential to experience adverse cumulative impacts" in all areas except for biological resource; we beg you to keep these statements in your final document and reinforce them with the historic facts from this area and with (Heaven forbid) "common sense".

As the people who live adjacent to Pantex we realize more than anyone else the tremendous adverse impacts the site presently has on our water resources, air quality, land resources, soil, vegetation, public and occupational health and safety, the present agricultural economy, cultural resources, and socioeconomic. With the addition of any one of the possible future actions at Pantex - this area stands to lose not only its economic base and stability, but also those resources which cannot be defined with facts and figures.

We feel that it is necessary to let you know that the people of the Amarillo Area are gravely concerned about the possibility of plutonium storage, processing, waste disposal, reactor possibilities, etc., as outlined in this document.

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08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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Plutonium storage is extremely dangerous, the facilities Pantex presently uses are insufficient, outdated and totally inadequate for future storage. To construct new facilities at Pantex to store plutonium, when there are more than adequate facilities at Manzano Weapons Storage Site at Kirtland Air Force Base, is completely unrealistic and economically not expedient. For the DOE to disregard this alternative in the Draft PEIS is reprehensible. The Manzano WSS is considered a reasonable alternative in the Pantex site wide EIS - it should also be analyzed as a reasonable alternative in the S4PPEIS. To disregard Manzano WSS because of nearby population, our concern is - are the people of the Texas Panhandle expendable? After all, we are helping to produce the food that the people of Albuquerque eat!	2/01.04.00
The plutonium processing options do not belong over the Ogallala Aquifer, which is our sole source of water. The contamination created at the facilities where this work has been done should be proof enough to the DOE that to contaminate another site is ludicrous. There is no technology to prevent this disaster from happening at Pantex, which lies on top of the Ogallala Aquifer and in the center of production agriculture.	3/09.04.04
The disposition options are not adequately analyzed. MOX fuel should not even be considered because of environmental, non-proliferation, economic, health and safety reasons and impacts. The nuclear industry is pushing this option with no regard for the communities which have to endure all the undesirable consequences of such processes. DOE should eliminate this option entirely.	4/08.03.01
This area must not be subjected to any reactor or reactors, not only because of impacts on the environment, we do not have sufficient water, but also because of the waste generated. Burning Pu in a reactor does not totally destroy the Pu and the waste generated by these reactors will be radioactive and in all probability remain on site. Pantex does not have the facilities to handle this type and/or amount of waste and storage over our water source is unjustifiable.	3/09.04.04 cont.
The agricultural economy of the Panhandle/Amarillo area is totally disregarded in this PEIS. This is the Cattle-Feeding Capitol of the world. The cereal grains produced here are sent all over the world. We feed the hungry of the world, while at Pantex DOE builds weapons of mass destruction to kill people. The dichotomy that exists here is heart-wrenching.	5/09.08.04
You may have just learned that our Ogallala Aquifer has been found to have contamination from the high explosives used at Pantex. How does the DOE plan to compensate the people of this area for this tragic happening? What will the final result be for agriculture and our agricultural products? What will the DOE substitute for our water supply? How will the economic stability of this area survive?	6/09.00.04

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01 04 00 Comment Number 2

Combined storage of pits and non-pit Pu at the Manzano WSA was originally eliminated as a reasonable alternative in the Draft PEIS. After considering separate storage of pits from non-pit Pu, the option to store these pits at the Manzano WSA no longer appears unreasonable. The Manzano WSA was evaluated in the Pantex EIS and Section 2.1.3 of the Final PEIS. The Final PEIS was revised to clarify the consideration of the Manzano WSA for combined storage, and a description of the WSA was included in Appendix P.

09 04 04 Comment Number 3

Waste/hazardous material treatment/handling operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface water which could then migrate to the groundwater.

08 03 01 Comment Number 4

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 08 04 Comment Number 5

The Proposed Alternatives for Pantex would be performed on existing DOE land and would not disturb any prime farmland. Furthermore, because the Proposed Alternatives would operate in full compliance with all Federal, State, and local environmental regulations, the operations would have no adverse impact on grain production. Thus, there would be no impact on the agricultural economy of the Panhandle/Amarillo area.

PANHANDLE AREA NEIGHBORS AND LANDOWNERS,
PANHANDLE, TX, DORIS AND PHILLIP SMITH
PAGE 3 OF 7

The DOE had better take care of the problems they presently have at Pantex and not consider any of those future actions listed in the S&OPEIS for location at Pantex. There are other places to handle the processes necessary to carry this country into the 21st century. THE DOE needs to STOP weapons research, development, and testing. The cold war is over - now its time to dismantle and dispose in logical, common sense ways. Stop construction of new facilities - it time to lay to rest this nuclear beast forever!

Sincerely,


Doris & Phillip Smith
Co-chairs

Enclosure

1/08.03.01
cont.

09 00 04 Comment Number 6

Current and future operations at Pantex are not expected to affect the water quality of the Ogallala Aquifer. Waste/hazardous treatment/handling operations are regulated to minimize the releases of hazardous substance to the soil or surface water which could then migrate to the groundwater. However, since this aquifer is being depleted (that is, the current withdrawal is exceeding the current recharge), Pantex operations contribute to the depletion of the Ogallala Aquifer and are analyzed in the PEIS. Also, current and future operations at Pantex are not expected to impact the soil used for agriculture and farming in the Pantex region.

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THE IMPACT OF AGRICULTURE ON THE HIGH PLAINS TRADE AREA

In the pursuit of new industries, we oftentimes fail to recognize and build on an existing primary and stable industry in the area - AGRICULTURE. The second leading industry in the state of Texas, agriculture essentially is based on renewable resources and offers enormous economic benefits for technology-based gains in productivity.

"Texas leads the nation in the production of cattle and calves, cotton, wheat and sorghum. Texas ranks among the top ten states in the production of 17 of the nation's top 25 agricultural commodities."

Source: U.S. Dept. of Agriculture, Agricultural Development (January 1987)

The dollar value of the agricultural industry to the High Plains Trade Area (HPTA) economy is immense, close to \$4 billion dollars a year. In all likelihood, this figure underestimates the value of agribusiness due to the omission of government offices such as the U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Department of Wildlife and Fisheries, independent feed stores and other small agribusinesses, agribusiness publications whose staffs and printing facilities are located in the HPTA and secondary processing of agricultural products. One of every four dollars of cash receipts from crops and livestock comes from the 26-county HPTA.

CROP PRODUCTION

HPTA crops annually bring in revenues exceeding \$591 million as detailed below:

Wheat	\$182 million
Grain Sorghum	136 million
Corn	103 million
Cotton	63 million
Sugar Beets	30 million
Vegetables/Other	77 million

Seven of the ten leading counties in wheat production in Texas are in the HPTA. These seven counties (Dallam, Moore, Sherman, Hansford, Ochiltree, Deaf Smith, and Carson) together grew 25.8% of the state's total wheat production in 1990. Almost half (46%) of all the wheat grown in Texas comes from the HPTA. This area produced 59.35 million bushels of wheat in 1990 of which 34.147 million bushels were irrigated. Texas produced 38.5 million bushels of irrigated wheat; in other words this area of Texas produces 89% of the state's irrigated wheat. HPTA also produces 25.2 million bushels of dryland wheat, or 27% of the state's non-irrigated wheat. 36% of Texas continuous crop wheat comes from this production area.

Parmer, Castro, Hale, Dallam, Moore, Hartley, Sherman, and Deaf Smith counties produce 63% of Texas corn.

PANHANDLE AREA NEIGHBORS AND LANDOWNERS,
PANHANDLE, TX, DORIS AND PHILLIP SMITH
PAGE 5 OF 7

Of the ten leading counties in sorghum production in 1989, five are in this trade area: Hansford, Deaf Smith, Ochiltree, Moore and Carson counties. 72% of the irrigated sorghum and 5% of the non-irrigated sorghum produced in Texas came from the HPTA in 1990; 26% of all sorghum produced in Texas came from HPTA.

In soybean production, four of the ten leading counties are in this trade area: Hale, Floyd, Lamb, and Swisher - which produce 42% of the state's soybeans. Five counties in this trade area produce 61% of the state's production of sunflowers. 28% of the Texas irrigated upland cotton is grown in seven counties in this trade area, 16% of all upland cotton in Texas is grown here.

LIVESTOCK PRODUCTION

The total sales for livestock and livestock products were 1.849 million for 1986, which is the latest year on which facts were available.

This trade area has been referred to as the cattle-feeding capital of the world. Approximately 80% of the world's supply of grain-fed cattle are fed in the United States. Texas ranks number one in fed cattle production in the United States, supplying 25% of the nation's fed beef. Of the state's production, 76.1% comes from this HPTA. This area has 22% of the total of all cattle and calves in the State of Texas, accounting for 3 million head.

AGRI-BUSINESS EMPLOYMENT

The agribusiness sector includes: retail trade; wholesale trade; manufacturing; agricultural services; transportation and public utilities; finance; insurance and real estate. Of the total area work force of 115,491 persons, approximately 31,700 salaried employees (27%) work in jobs related to agribusiness in this area, excluding government employees. The 1986 payroll of agribusiness firms accounted for \$446.21 million, 24% of the total area payroll of \$1,869,966,000.

Of the 19 manufacturing industries shown in the HPTA, seven are classified as agribusiness: food and kindred products; textile mill products; apparel and other textile products; lumber and wood products; furniture and fixtures; paper and allied products; and leather and leather products. During 1986, these seven agribusiness industries employed 11,407 people or about 51% of the total employment in manufacturing. Payroll is \$220.5 million, 42.4% of the total wages paid in manufacturing in the HPTA.

Agribusiness firms within the wholesale trade category employ 4,897 people with an annual payroll of \$88.5 million, which is 44% of total employment and 43% of total payroll in wholesale trade.

Of the eight retail trade categories listed in the HPTA, three are agribusiness related. These are building materials and garden supplies, food stores and eating places. These three industries employed 13,843 people with an annual payroll of \$115,955,000 in 1986. These figures represent 19% of the total employment and 9% of the total payroll in HPTA retail trade.

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Agricultural services is the third largest category, including veterinary services, animal services, and landscape and horticultural services. It has approximately 1,074 employees and accounts for \$15.15 million in annual payroll. Eight companies were engaged in the warehouse and storing of commodities, with a payroll of \$4.3 million, and about 200 employees. Agricultural credit institutions employ 94 persons, with a payroll of \$1,795,000.

The above data does not include the payroll of commodity organizations, such as: state headquarters of the wheat growers, corn growers, sugar beet growers, cattle feeders and the American Quarter Horse Association which are all located in the trade area.

People recognize the High Plains Trade Area as an agricultural region, but few realize the magnitude of the industry in terms of revenues, tax base, and employment for area residents.

AGRICULTURAL QUICK FACTS

Texas ranks first in the number of farms and ranches and first in the amount of farm and ranch land. Texas is the third largest agricultural state. It accounts for the nation's second highest farm income at some \$12 billion annually. Texas ranks first in the value of farm real estate, first in cash receipts for livestock and products, second in cash receipts for all commodities and fifth in cash receipts for crops.

"TEXAS PROCESSES ONLY 6% OF THE NATION'S PROCESSED COMMODITIES, YET TEXAS RANKS SECOND IN THE VALUE OF RAW COMMODITIES PRODUCED. FOR EVERY PERCENTAGE POINT WE ADD TO OUR PROCESSING TOTAL, WE WOULD ADD 90,000 JOBS AND 9 BILLION DOLLARS TO THE TEXAS ECONOMY. WE MUST PROCESS OUR OWN PRODUCTION"
Governor's Task Force on Agricultural Development, Lubbock Hearing, June 27, 1988.

The economic clout which we have we need to use, **value-added processing would bring billions of dollars into the HPTA.** Historically, growth and development in Texas have been closely associated with a progressive and productive agricultural industry. The production of agricultural products expands economic activity in Texas far beyond the farm gate. Suppliers, processors, distributors - all agribusiness - benefit from agricultural production; ONE DOLLAR OF FARM SALES STIMULATES OVER \$3.40 IN ACTIVITY WITHIN THE TEXAS ECONOMY.

That's what IS happening. Here is what COULD happen. If area economic developers pushed to develop some of the facets of agriculture as they have pushed to develop other industries, AND if they brought to optimum use of value added in the acres and various items that are produced in the Texas Panhandle, the economic impact of agriculture of the entire area would be in excess of four Super Colliders.

Put that in your economic-multiplier and see what you come up with!

PANHANDLE AREA NEIGHBORS AND LANDOWNERS,
PANHANDLE, TX, DORIS AND PHILLIP SMITH
PAGE 7 OF 7

RESOURCES:

The Impact of AGRIBUSINESS IN THE TEXAS HIGH PLAINS TRADE AREA, October 1989, Richard Edwards and Steve Amosson, Texas Agricultural Extension Economist; Jim Smith, Potter County Extension Agent; Texas A & M University System, published in cooperation with the City of Amarillo, Amarillo Economic Development Corporation and Southwestern Public Service.

1989 and 1990 Texas Agricultural Statistics, Texas Agricultural Statistics Service; Texas Department of Agriculture; U. S. Department of Agriculture.

Governor's Task Force on Agricultural Development, Lubbock Hearing Testimony, June 27, 1988.

Recommendations of the Business Development and Jobs Creation Task Force, submitted to Governor William P. Clements, Jr., January 1987.

June 1991, Doris Smith, HCR 2, Box 20, Panhandle, TX 79068, (806)335-1050.

M-280

PANHANDLE GROUND WATER CONSERVATION DISTRICT NO. 3,
WHITE DEER, TX, C. E. WILLIAMS
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Panhandle Ground Water

Conservation District No. 3

John S. Williams, President
Frank Elmore, Vice-President
Charles Brown, Secretary
Freddy Smith, Treasurer
Jim Jones, Director
Jim Williams, Director
Robert A. Clark, Director
C. E. Williams, Manager

P.O. Box 637 • White Deer, Texas 79087 • Ph. 806/683-2501 • Fax 806-2182

May 7, 1996

DOE-Office of Fissile Materials Disposition,
c/o SAIC-PEIS
P.O. Box 23786
Washington, D.C. 20026-3786

RE: Comments on Storage and Disposition of Weapons-Usable
Fissile Materials Draft PEIS

The District's purpose is provide for the conservation, preservation, protection,
recharging and the prevention of waste of the underground water reservoir
through Subtitle E. Groundwater Management, Chapter 36, Texas Water Code.

In fulfilling our charge, I would agree with the two statements on page s-46 of
the summary.

Long - Term Storage Alternatives

"Among the DOE sites under consideration, Pantex has the greatest potential
to experience adverse cumulative impacts, particularly because of its relatively
small, compact area. Water resources and biological resources would be
vulnerable, and land resources, air quality, cultural resources, socioeconomics,
public health and safety, waste management, interstate transportation, and
environmental justice could be susceptible to adverse cumulative impacts."

F-032

PANHANDLE GROUND WATER CONSERVATION DISTRICT No. 3,
WHITE DEER, TX, C. E. WILLIAMS
PAGE 2 OF 2

Page 2
May 7, 1996

Disposition Alternatives

"Implementation of the various proposed disposition alternatives to one or more of the DOE sites has the potential for incremental cumulative impacts in addition to the cumulative impacts identified above for the long-term storage alternatives. Among the DOE Sites used for analysis purposes, Pantex would have the greatest potential to experience adverse cumulative impacts."

After review of the document, it is apparent to me that there are better locations for the referenced missions than at Pantex. I am not willing to accept the risks that they might have on the Ogallala Aquifer.

Sincerely,


C. E. Williams
General Manager

1/08.03.01

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Waste/hazardous material treatment/handling operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface water that could then migrate to the groundwater. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

F-032

PANHANDLE PLASTIC SURGERY, AMARILLO, TX,
JOHN C. KELLEHER, JR.
PAGE 1 OF 2

PANHANDLE PLASTIC SURGERY, P.A.
JOHN C. KELLEHER, JR., M.D., F.A.C.S.

Plastic Surgeon, Board of Plastic Surgery

1815 Coulter Drive Amarillo, Texas 79108
(805) 358-4731 FAX (805) 358-4837 1-800-485-3804

April 3, 1996

U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, D.C. 20026

Re: Stockpile Stewardship and Management and Storage and
Disposition of Weapons-Usable Fissile Materials

Dear Sirs:

Thank you for the opportunity to comment on the U.S. Department of Energy's (DOE) Draft Environmental Impact Statement (EIS) for the proposed expansion of the Pantex Plant and the Disposition of Weapons-Usable Fissile Materials. Please also consider this comment on the Pantex Site-Wide Draft Environmental Impact Statement, since most of the issues addressed in these documents are identical.

Of utmost concern has always been safety in the Pantex Plant and a certainty that the operations will be conducted in an environmentally sound manner. As a physician, I want to ensure that Pantex expansion is implemented in a way that does not impair the health or safety of area residents or have an adverse affect on the environment.

While the DOE has selected Pantex as the preferred alternate for assembly/disassembly, they failed to recognize Pantex as the preferred facilities in going to the DOE has overlooked the best site for maintaining the integrity of the new U.S. nuclear stockpile and attaining maximum efficiencies and cost savings.

I feel that Pantex is the best site for new construction/stewardship activities. Any comparisons the DOE looks at should be closely examined, especially being sure that comparisons are accurate including capital required, transportation, training, remediation, and other costs.

Pantex is obviously the best site to continue high explosives fabrication, having performed this for more than 40 years with an excellent safety record.

Plastic & Reconstructive Surgery • Surgery of the Hand • Aesthetic Surgery

M-014

PANHANDLE PLASTIC SURGERY, AMARILLO, TX,
JOHN C. KELLEHER, JR.
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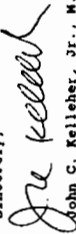
08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

U.S. Department of Energy
April 3, 1996
Page Two

I would urge the DOE to designate Pantex as the preferred alternate site for all existing and new stockpile management and stewardship functions as well as consolidation of all plutonium storage and disposition in any related functions. Thank you very much for the opportunity to comment on these documents.

Sincerely,



John C. Kelleher, Jr., M.D.

su

1/08.03.01

M-014

PARUCHURI, KAVENDRA
PAGE 1 OF 3

Department of Energy
POBox 3417
Alexandria, VA 22302

Dear DOE,

Your claim that you want citizen involvement and the best possible alternative for dealing with nuclear weapons and waste sounds terrific, yet

I cannot help to find numerous contradictions in your statements in the SS&M and PEIS.

You fail to note:

1)We are trying to get rid of our plutonium and HEU, not make more of it in new and old reactors. Building more reactors can, in turn, spur the development of more nuclear weapons by the use of reactor byproducts. This plan for reusing plutonium in reactors breeds the proliferation of nuclear weapons not only in the US but also in other countries. Countries can start with the guise of using "commercial" reactors and secretly build nuclear weapons(see North Korea). Also, by reusing the plutonium, we will get more hazardous waste than we originally had.

2)DOE's visions need to be long-term, not short-term. Sure, nuclear reactors can give us energy in the short term, but is it worth risking the health and well-being of our children for 20,000 years to come? No. No. No. Even though death may not be immediate, radiation leads to death by

1/01.06.00

2/01.00.00

M-208

01 06 00 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Spent fuel produced under the weapons Pu disposition mission would be essentially the same as fuel normally produced in commercial reactors (both have Pu in the spent fuel form) which would not be more hazardous. The spent fuel would meet the same criteria as the commercial reactor spent fuel that would eventually be sent to an NWPA geologic repository.

01 00 00 Comment Number 2

It is only prudent and responsible to include both short and long terms. If Pu disposition is not implemented in the short term, the "clear and present danger" of nuclear proliferation could cause significant long-term irreversible damage to mankind.

PARUCHURI, KAVENDRA
PAGE 2 OF 3

changing DNA. No level of radiation is proven to be safe! Taxpayers end up footing many health bills that result from the radioactive poisoning that the DOE has allowed.	3/01.00.00	01 00 00 Comment Number 3 The Department of Energy has declassified a great deal of information regarding weapons-usable fissile materials. Inventories and locations of these materials were documented in a report released by the Secretary in her Openness Initiative in 1993 and again in 1996.
3)DOE needs to stop lying to the public about information that it has presently and about government deception in the past. DOE continues to lie to the people(see the reactor and people at Hanford, Washington who were poisoned by a radioactive cloud that the government secretly released). Unless the government opens its records to the public, we will never get at the truth.	4/01.00.00	01 00 00 Comment Number 4 The Department of Energy considered a total of 37 alternatives for Pu disposition, and selected nine "reasonable" alternatives for further analyses in this PEIS. The screening process to select these alternatives was documented and reviewed by the Interagency Working Group (membership includes various Federal agencies and the White House Office of Science and Technology). DOE efforts also considered and built on the extensive previous work of the NAS.
4)DOE needs to consider more alternatives. By using the same contractors over and over, DOE fails to see new ideas and methods of disposal. Independent scientists, academics, analysts, and experts(working on their own; not for corporate America or the government) need to collaborate to research and find the safest method of disposal. Alternatives like vitrification must be considered.	5/01.00.00	01 00 00 Comment Number 5 Comment noted.
5)Worker and community safety need to be the number one priority. Also, DOE needs to be consistent with the global urgency of eliminating all nuclear weapons. Nuclear reactors need to be shut down because as long as there are nuclear reactors, a potential for bomb making is present.	6/08.02.00	08 02 00 Comment Number 6 The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.
6)DOE really does not care about public opinion despite its claims. This debate is the most pressing issue facing Americans today, yet why did the government nationally encourage participation. I see Army	M-208	

PARUCHURI, KAVENDRA
PAGE 3 OF 3

08 00 00 **Comment Number 7**
It is recognized that storage and disposition of surplus weapons-usable fissile materials is a complex situation and necessarily involves the use of many technical terms. DOE has made every effort to keep the PEIS a readable document. The size of the document not only reflects the complexity of the proposed proceedings but also provides the public all of the information needed to fully participate in the decisionmaking process.

08 02 00 **Comment Number 8**
The *National Environmental Policy Act* requires the government to make documents such as the PEIS available to the public for comment so that the scrutiny of all members of the public can be applied to the Proposed Action. DOE also holds a number of interactive public meetings at which senior DOE officials present information, answer questions, and accept public comments. DOE strives to hold meetings and open avenues for comment in such a manner that there are no unheard voices.

commercial all the time, but I did not see any commercials about SS&M and PEIS. Why was the local Nashville football debate set above the nuclear debate?

In addition, the PEIS(all 3,000 pages) is too confusing and complicatedly written for most citizens to understand. The incessant use of jargon terms, although useful in a DOE spelling contest, only serve to perplex the reader.

The terrible truth is: no citizen has time to read 3,000 pages of jargon. I suggest that the government create a nationally televised forum in which the DOE goes up for questioning on this issue. I'm not talking about a one sided DOE lecture. I'm talking about intensive scrutiny of the DOE by independent scientists, environmental activists, community leaders, academics, and other people who are against proliferation. If the DOE is so certain that it has all the options, let the members of DOE take on the unheard voices in front of the media and the American people.

If read, I'm sure that this letter will be dismissed as a letter from "just another one of those hippie freaks." Rest assured, I am not a hippie and certainly am not a freak.

Outraged United States CITIZEN,
Kavendra Paruchuri

7/08.00.00

8/08.02.00

M-208

PEACE ACTION TEXAS, DALLAS, TX,
JAN SANDERS
PAGE 1 OF 4



Jay Rose
Office of Reconfiguration, U.S. Dept. of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

April 24, 1996

Dear Mr. Rose,

Please find here comments on the PEIS's that have recently been issued related to the reconfiguration of the Nuclear Weapons Complex. It is with great seriousness and concern that I am writing.

The comments are limited and incomplete due to the complexity of the subject, the voluminous nature of your "dictionary-size" reports, and the shortness of the time to comment.

I represent, in principle, the positions taken by the statewide group of which I am chair, Peace Action Texas, and of the national organization, with which we are affiliated with the same name. Together we are the largest grass roots peace organization in the country, we are an NGO to the United Nations and cooperate and support similar peace organizations in others countries.

As a peace activist who has been for years an advocate of nuclear disarmament, a Comprehensive Test Ban and a world treaty for Non Proliferation, I am celebrating the fact that we are finally on the path. Indeed, we are now living through a time of historic opportunity. Our actions, our policies will effect generations throughout the world for thousands of years to come. I hope and pray that we have the will and the moral courage to grasp this opportunity.

The United States can and must lead the world on a path to peace--peace with one another and peace with our fragile planet. Our decisions and actions related to our Nuclear Weapons Complex will be a major part of that journey for mankind.

Sincerely,

Jan Sanders
Jan Sanders
Chair, Peace Action Texas

Peace Action Texas is a grassroots based organization whose mission of purpose is to educate the public in order to recruit members and organize them into a nonviolent citizens' movement with the mandate political power to reverse the world arms race, abolish nuclear weapons, teach and practice non-violent resolution of conflict and construct a world of peace & justice.

Jan Sanders, Chair 7326 Malabar Lane Dallas, TX 75230 (214)369-9388

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PEACE ACTION TEXAS, DALLAS, TX,
JAN SANDERS
PAGE 2 OF 4

08 02 00 Comment Number 1
The Department of Energy, including the Office of Fissile Materials Disposition, makes every effort to automatically notify those who have participated in the past of public meetings about the availability of documents.

Comments
by Jan Sanders
re the Draft Programmatic Environmental Impact Statement for the Stockpile Stewardship and Management of Nuclear Weapons and the Storage and Disposition of Nuclear Materials

Process for public comment: I called the DOE one week prior to the Amarillo meetings to get the schedule and format so that I could meet the deadline for air fares to travel from Dallas. The schedule, as told to me, changed in that week. Indeed local members said that had been a problem throughout the lead time for this meeting.
I am concerned about all three of the PEIS's, but I needed to be four places at once Monday evening, which was impossible. Because I was told that everything would be over by noon on Tuesday I was not able to avail myself of the additional sessions on Tuesday afternoon.
I would encourage the Dept. in planning future meetings, hearings or workshops to automatically notify those who have participated in the past and to notify national offices of groups that would be interested in providing public input on the topics at stake.
The message? Public input, questions, and comments are not really being sought in this round of reviews.

1/08.02.00

Questions and Requests:

- 1) I would like to have sent to me the documents, memorandum or legislation from the President and the Congress that directs the DOE "to maintain the safety and reliability of the enduring nuclear weapons stockpile." p S-1 What is the number of warheads that the Dept. is being asked to maintain in the ready arsenal? How was this number determined? Was there public debate on this?
I was surprised to be told in Amarillo that the number (NWSR) was classified as a matter of national security. Is the number so small that the touted "nuclear deterrence" would be questioned? In light of the collapse of the Soviet Union, the signing of the NPT treaty extension and the discussions of a CTB, and the fact that we do indeed live in free and open society—I plan to request a Freedom of Information request for this information. It is impossible to respond to the issues of safety and environmental impact when the numbers range in the thousands.
"Stockpile stewardship and management capabilities are independent of foreseeable future stockpile sizes." S-3. It is hypocritical to say that we will lead the world toward nuclear disarmament, our NPT position, but we want to keep on the ready the capability of putting a bomb together tomorrow.
- 2) In light of the negotiations for a CTB and the Testing Moratorium that has been in effect under both a Republican and Democratic President, why is the Nevada Test Site being maintained and funded?
- 3) Why must an alternative to underground nuclear testing be developed to verify the "safety and reliability of weapons"? S-1 Our arsenal has been tested, repaired, & maintained for years. We have accumulated a huge stockpile and an incredible amount of knowledge. Didn't we learn how to do it? How can the additional expense be defended?
- 4) In light of the knowledge (an lack of it) that we have acquired in the 50 years of the atomic era, why would we even consider the continuation of the new construction that would result in the

M-216

creation of more low and high level waste? We are struggling with the waste we already have! To construct new facilities that would provide the plutonium processing that formerly was at Rocky Flats in this era of nuclear disarmament seems to make a mockery of our treaties, it insults the intelligence of the American taxpayer and is an incredible threat to the environment. 5) In the alternative to consolidate the "capability", translate that the ability to build new nuclear bombs, that moves the Rocky Flats plutonium processing to Pantex, I would like to ask if any or all of the other DOE facilities are located over an aquifer?	2/09.04.08	09 04 08 Comment Number 2 Potential impacts to groundwater quality are considered to be minimal at all facilities due to hazardous material/waste handling and treatment/disposal Federal and State requirements. Due to the current and expected future depletion of the Ogallala Aquifer, the potential to affect groundwater availability is a concern at Pantex.
6) Clarity for me the level of importance placed on the impact of jobs lost or jobs gained in any particular area in making your recommendations I hope to receive answers to the above questions. In light of these questions, I would like to take some clear positions on the issues. Positions and uplings: 1) Develop a program that would continue the orderly disassembly of our nuclear arsenal. Use this disassembly action to lead and provide an incentive to the other nuclear powers to do the same. Concentrate our research and considerable technical expertise on the safe disposal of the lethal material. Use the nuclear labs and our trained and dedicated workers throughout the complex in a collaborative way to assist other nuclear powers in safely disposing of the nuclear arsenals over a period of time, with open inspections and exchange of expertise. 2) Provide American citizens with information that will enable them to participate in the development of a sound and safe nuclear public policy. The removal of the "classified for national security" blanket will set the stage for transparency in dealing with our international global neighbors 3) If other DOE sites are not over aquifers of the size and importance as the Ogallala, I would urge the storage of plutonium or the vitrified or ceramic treatments of the waste at any of these other sites. There is no good location, but we do know that if radio-active material from plutonium enters the water supply it will be there for what number of years?--25,000? or just a few hundred? 4) I strongly oppose the use of surplus plutonium by the nuclear energy companies here or abroad. It continues the waste stream, threatens the environment at every movement and handling of the material, and it leaves plutonium in the spent fuel that could be diverted to nuclear weapons. I know it is hot, difficult, etc., but the plutonium is still there and plutonium is a crucial component of the bomb. 5) Shut down the Nevada Test Site. Convert it to a solar energy testing site or is the area to hot? 6) Shut down one of the labs. Does the myth of the "competition" still rein? When I learned that Nagasaki bomb was from the 2nd lab it made me grieve with shame that we might have used Nagasaki as a test. Convert the remaining lab into an all out effort to do the research on waste disposal or neutralization of radio-active materials	3/08.03.00	
4/08.02.00	4/08.02.00	08 03 00 Comment Number 3 Socioeconomic factors, such as the number of jobs lost or gained under each alternative, have been analyzed in the PEIS. That information will be presented to the decisionmakers in making decisions on the storage and disposition of weapons-usable fissile materials. Socioeconomic environmental factors include the number of direct jobs (construction and operation), indirect jobs, local area infrastructure (police, hospitals, transportation, and education), and environmental justice.
5/08.03.01	5/08.03.01	
6/08.03.01	6/08.03.01	08 02 00 Comment Number 4 The PEIS and its source documents referenced in Chapter 5 (<i>References</i>) of the PEIS are unclassified to the extent practicable without compromising national security. The classified information needs to be protected in order to reduce the probability of the nuclear materials being taken by terrorists, foreign or domestic. DOE is committed to an Openness Policy. A significant portion of the information used to prepare this PEIS was declassified in the last 2 years.
08 03 01 Comment Number 5 The Department of Energy acknowledges the commentator's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.		

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PEACE ACTION TEXAS, DALLAS, TX,
JAN SANDERS
PAGE 4 OF 4

7) Stop the connection between technological research and development and war and killing. If our scientists would benefit from the development of a super computer, fine. Place it in one of our great universities or hospitals or at the Peace Institute not for new bomb making.

8) Peace Action has as one of its four program areas its support for economic conversion from a war-defense contracted economy to a peace economy. It includes job conversion and/or re training of workers loyal to and dependent as their localities have also been on the large government defense contracts. We would not turn our backs on their needs, nor would we ever support the continuation of bomb making as a jobs program. The DOE should not allow the boosterism of the Chamber of Commerce of one area (Panhandle 2000) dictate these decisions of national and international import. And finally,

9) Peace Action has taken a position in support of Abolition 2000, a worldwide movement to abolish nuclear weapons by the year 2000. Therefore, I urge that you consider the Start II treaty just that, a start toward the very attainable goal of Abolition 2000. To allow the Start II treaty to limit in anyway our leadership in the Non Proliferation work (p 5-7) would be wrong.

Some further observations, questions and comments:

With a stockpile numbering in the thousands, which was built over a period of years, I would make the logical assumption that it will age over a period of time as well. What if we cannibalized parts from one to another to make repairs and to maintain as many as possible, how long would it take for us to drop to zero? If, during this wear down period, we took a leadership role in the Non-Proliferation movement, we could produce a much safer and secure world, than we would have if we were bristling with new weapons 'capability'.

In recent years the military genius of this country has produced modern, non nuclear weapons that approach the destructive power of a nuclear warhead. As a peace advocate, I'm not particularly proud of that, but I would point out that the environmental risks from the raw materials, the transport, the manufacturing, the assembling and the deployment of those weapons are not as great or as long lasting as those associated with nuclear bombs. How can we put our own people and our own environment at this level of health and safety risk when we have in hand safer alternatives? Have we, in the build-up and now in the prospects of the 'stewardship' of an arsenal capable of blowing up the world, deferred the bomb from being dropped on us by others, but instead have we not dropped it on our selves?

The power, the near worship of the power of the nuclear bomb is evil. It undermines the moral character of this country that we are willing to continue to possess weapons of mass destruction of this magnitude and by the possession threaten the peoples of the world with their use.

During the height of the arms race during the Cold War the Bishops of the Catholic church challenged the bomb making and then the Bishops of the Methodist church in their 'In Defense of Creation' pastoral letter challenged even the possession.

I intend to copy these comments to the President, the Secretaries of Defense and Energy and to my

electd representatives to Congress -
Thank you - Jan Sanders

7/01.06.00

M-216

08 03 01

Comment Number 6

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 06 00

Comment Number 7

Comment noted.

PEELLE, BOB, OAK RIDGE, TN
PAGE 1 OF 3

Storage and Disposition of Weapons Fissile Materials Comments on Draft PEIS April 2, 1996 Bob Peelle 130 Oklahoma Avenue Oak Ridge, TN 37830		
Summary: 1. The "no disposition" option should be chosen for surplus weapons plutonium in the short run. Since treaty obligations probably require effort soon to reduce the amount of weapons plutonium stored, a plan must be developed to reduce the total amount of plutonium through its use as fuel in suitable nuclear reactors. Note that mixed oxide fuel use in current light water reactors would not reduce the total plutonium figure very much. (Total Pu = weapons Pu + reactor fissile Pu.) 2. The number of storage sites for weapons plutonium should be reduced (not necessarily to one). This thought is based on efficiency and the need to abandon some storage sites. 3. Plutonium and HEU storage should not be co-located. If the same site must be employed, strict separation between the areas used for each material should be assured. This suggestion is based on the assumption that fissile materials will be processed to some extent at each storage site. The health physics needs at the facilities can efficiently be met if workers at the HEU storage site are sure that plutonium cannot be present.		1/01.00.00
Details leading to Recommendation 1: The author recognizes that this recommendation rests on different bases from those generally adopted. These are: a. DOE and relevant agencies in other responsible nations should show concern for the long-term future of our society. Here, I suggest a time horizon of 1000 years for our nation and at least 1000 generations for human civilization. b. Energy resource depletion will eventually be a problem, so we should avoid compromising the resources that will be required. If breeder reactors come to be needed, plutonium reserves will be of great value for startup.		2/02.00.08
		3/08.03.01
		4/02.04.08
		1/01.00.00 cont.

OR-001

01 00 00 Comment Number 1

The Department of Energy's Proposed Action is to conduct disposition for surplus Pu and provide safe and secure long-term storage for non surplus weapons-usable fissile materials to support national defense. The intent of the Proposed Action for Pu disposition is not to pursue total Pu destruction, but to convert the Pu into a proliferation-resistant form that meets the Spent Fuel Standard as recommended by the NAS. DOE, in considering the Spent Fuel Standard, evaluated the adequacy of the Standard versus the greater degree of destruction achievable with other options such as the Advanced Deep Burn Reactor Option and the Accelerator Option. It was judged that the Spent Fuel Standard is adequate since it would convert the weapons Pu to a form that would make it as difficult to retrieve and reuse in weapons as the Pu contained in the much larger existing volume of spent fuel from commercial nuclear reactors.

02 00 08 Comment Number 2

Comment noted.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentator's opposition to the Collocation Alternative. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

02 04 08 Comment Number 4

Comment noted.

PETERS, DON, POCATELLO, ID
PAGE 1 OF 1

Comment ID: P0020
Date Received: April 18, 1996
Name: Don Peters
Address: Pocatello, ID

Transcription:

I'm for using the expertise that is available at the INEL to classify nuclear waste, however, the storage problem has got to be solved. If the State of New Mexico continues to stall on the utilization of the storage facility that has been built down there, it should be closed, and if they stall saying they need roads around their cities, to me that's just another stall. The overhead that is being spent at taxpayer's expense down there for, in my estimation, no good purpose should be terminated, and if Nevada is going to pull the same thing, then we should be taking a hard look at that. Idaho has got the expertise and an area that can process this material without undue harm if it's left above ground and not in storage. If the storage problem should ever contaminate the aquifer out there, the down stream area of Idaho could be seriously damaged. That's my comments.

1/08.03.01

2/12.00.00

3/09.04.03

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

12 00 00 Comment Number 2

Comment noted.

09 04 03 Comment Number 3

Hazardous material handling/storage operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface waters where they could migrate to the groundwater.

P-020

PETERSON, DANIEL E., SEATTLE, WA
PAGE 1 OF 2

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement (PEIS) Public Comment Form	
Name (optional):	<u>Daniel E. Peterson</u>
Address (optional):	<u>9127 75th Ave NE</u> <u>Seattle, WA 98115</u>
Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to: Department of Energy Office of Fissile Materials Disposition P.O. Box 23786 Washington, D.C. 20026-3786 or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 1, 1994. The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.	
1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.	<u>After listing the public concern</u> <u>presented, the action needs to be taken</u> <u>the air should include security at each site</u> <u>materials left present cause for weapons.</u> 1/08.03.01
2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.	<u>Current problems with deep borehole disposal</u> <u>or direct disposal into the deep borehole</u> <u>disposal has been immobilization has might</u> <u>be tried on a limited basis before mass</u> <u>disposal</u> 2/08.03.01
3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.	<u>This is less desirable and calls for</u> <u>security on the increased scale</u> 3/08.03.01
4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.	

M-111

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

PETERS, DON, POCATELLO, ID
PAGE 1 OF 1

Comment ID: P0020
Date Received: April 18, 1996
Name: Don Peters
Address: Pocatello, ID

Transcription:

I'm for using the expertise that is available at the INEL to classify nuclear waste, however, the storage problem has got to be solved. If the State of New Mexico continues to stall on the utilization of the storage facility that has been built down there, it should be closed, and if they stall saying they need roads around their cities, to me that's just another stall. The overhead that is being spent at taxpayer's expense down there for, in my estimation, no good purpose should be terminated, and if Nevada is going to pull the same thing, then we should be taking a hard look at that. Idaho has got the expertise and an area that can process this material without undue harm if it's left above ground and not in storage. If the storage problem should ever contaminate the aquifer out there, the down stream area of Idaho could be seriously damaged. That's my comments.

1/08.03.01

2/12.00.00

3/09.04.03

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

12 00 00 Comment Number 2

Comment noted.

09 04 03 Comment Number 3

Hazardous material handling/storage operations are regulated to minimize the potential for releases of hazardous substances to the soil or surface waters where they could migrate to the groundwater.

P-020

PETERSON, DANIEL E., SEATTLE, WA
PAGE 1 OF 2

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement (PEIS) Public Comment Form	
Name (optional):	<u>Daniel E. Peterson</u>
Address (optional):	<u>9127 75th Ave NE</u> <u>Seattle, WA 98115</u>
Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to: Department of Energy Office of Fissile Materials Disposition P.O. Box 23786 Washington, D.C. 20026-3786 or, you can call this toll-free number to leave comments by phone: 1-800-820-5156. Comments must be submitted by May 1, 1994. The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.	
1. Materials Immobilization/Vitrification - Immobilize fissile materials by mixing them with glass, glass bonded zeolites, or ceramics.	<u>After listing the public concern</u> <u>presented, the action needs to be taken</u> <u>the air should include security at each site</u> <u>materials left present cause for weapons.</u> 1/08.03.01
2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.	<u>Current problems with deep borehole disposal</u> <u>or direct disposal into the deep borehole</u> <u>disposal has been immobilization has might</u> <u>be tried on a limited basis before mass</u> <u>disposal</u> 2/08.03.01
3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.	<u>This is less desirable and calls for</u> <u>security on the increased scale</u> 3/08.03.01
4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.	

M-111

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Immobilization Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

PETERSON, MERRY ANN, SEATTLE, WA
PAGE 1 OF 2

Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic
Environmental Impact Statement (PEIS) Public Comment Form

Name (optional):
Address (optional):

Merry Ann Peterson
20230
Seattle, WA 98148-4111

Please write down your comments and drop this form in the marked boxes before you leave tonight. These forms will be submitted to the Department of Energy as part of the formal comment on this PEIS. If you are unable to complete this form tonight, written comments can be mailed to:

Department of Energy
Office of Fissile Materials Disposition
P.O. Box 2178
Washington, D.C. 20026-1786

or, you can call this toll-free number to leave comments by phone: 1-800-820-5136. Comments must be submitted by May 7, 1996.

The Department of Energy has identified three types of technologies as options for disposing of weapons-usable fissile materials. The Department has also considered a "no action alternative" which would result in long-term storage of these materials. Please write down your comments on the following three types of options for disposal and the storage option.

1. Materials Immobilization/Verification - Immobilize fissile materials by mixing them with glass, glass bonded zirconia, or ceramics.
Please we don't need this if it will be buried very deep.

1/08.03.01

2. Deep borehole disposal - Materials would be disposed in boreholes at least 2.5 miles deep, in geologically stable formations. Materials could be disposed directly into the deep borehole, or materials could be immobilized first, and then deposited into the deep borehole.
This sounds good

1/08.03.01
cont.

3. Reactor Options - Surplus plutonium/highly enriched uranium would be made into MOX fuel for use in nuclear reactors, destroying by fission a major portion of the weapons grade materials.
I understand this is what we get rid of all the plutonium, is that right?

2/06.00.08

4. Storage Options - USDOE would continue existing storage practices for weapons-usable fissile materials at current locations and/or consolidate that storage at one or more of the designated sites.
NO

3/08.03.01

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08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Borehole Alternatives. Decision on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

06 00 08 Comment Number 2

The commentor is correct. Whereas there is a net reduction in the Pu inventory by an appreciable fraction, typically 25 to 35 percent, and perhaps as high as 50 percent, the total inventory is not destroyed. Note that the residual Pu is encapsulated in a highly radioactive spent fuel assembly and is no longer considered to be weapons-usable.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's opposition to long-term storage. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

PETERSON, MERRY ANN, SEATTLE, WA
PAGE 2 OF 2

Please use this space to write down any additional comments on the Storage and Disposition
of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement.

I am wondering if there are still problems as there were
when the sheep shown used died in the 1940s; radiation sickness
is in Japan since 1945; radiation sweeping as in the Sellafield case.
I understand the Chernobyl incident was a worker induced problem
where workers over rode all safety devices to test a theory.
Thank you for addressing these issues.

4/15.00.00

Comment Number 4

15 00 00

Comment noted.

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**PHYSICIANS FOR SOCIAL RESPONSIBILITY, DENVER, CO,
SAMUEL H. COLE
PAGE 1 OF 2**

PHYSICIANS FOR SOCIAL RESPONSIBILITY

THE U.S. AFFILIATE OF INTERNATIONAL PHYSICIANS FOR THE PREVENTION OF NUCLEAR WAR
RECIPIENT OF THE 1985 NOBEL PEACE PRIZE
1718 Wyckoff, Suite 1, Denver, Colorado 80202 • (303) 298-4001

May 7, 1996

Office of Fissile Materials Disposition
Department of Energy
P.O. Box 23786
Washington, DC 20026-3786

Comments on the Storage & Disposition Draft PEIS

Please accept these comments on behalf of the Colorado Chapter of Physicians for Social Responsibility on the Draft Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons-Usable Fissile Materials:

Introduction

The United States government bears the awesome responsibility of protecting its vast quantity of plutonium stored in Colorado and other states from ever ending up in a nuclear weapon. Decisions the United States government makes on the future disposition and storage of plutonium must also protect the public, workers and the environment from hazards associated with the plutonium.

(Although these comments specifically refer to plutonium, they also pertain to highly enriched uranium, as applicable.)

Specific Comments

1. Disposition option should be limited to immobilization: The only option the Department of Energy (DOE) should be considering is immobilizing the plutonium which would 1) stabilize it, 2) help prevent theft or diversion and 3) would make a very important statement to the rest of the world that plutonium has no value or usefulness thereby discouraging other countries for using it too, whether for civilian or military purposes. The immobilization process most promising is vitrification. A pilot vitrification facility should be studied for Rocky Flats without delay. Because plutonium at Rocky Flats is likely to be stored on site for many years, the DOE should begin making plans for storing it in a manner that addresses nuclear non-proliferation and safety. Absent from the draft PEIS are any such plans for the possible scenario of longterm storage of plutonium at Rocky Flats. This should be included in the final document in the context of exploring vitrification at Rocky Flats.
2. Reactor fuel and deep borehole disposal should not be under consideration: The use of plutonium as a fuel for nuclear reactors would be unwise from two standpoints. First, such an option is not

M-169

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

01 05 00

Comment Number 2

Rocky Flats Environmental Test Site is not included in the PEIS as a candidate site for any of the alternatives evaluated. DOE has made a decision to move all weapons-usable materials out of RFETS and clean up the site. Any decision to vitrify Pu will involve RFETS only to the extent necessary to provide for stabilization of materials prior to their transfer to another DOE site.

08 03 01

Comment Number 3

The Department of Energy acknowledges the commentator's opposition to the disposition alternatives. The President's Nonproliferation Policy says the United States will not recycle Pu. Burning weapons-usable Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this process will not be extracted for reuse in new fuel. This is consistent with U.S. policy since no Pu is being recycled. After a once-through fuel cycle, the Pu would be converted into a nonproliferation form as spent reactor fuel.

The Reactor Alternative using MOX fuel is a reasonable alternative that converts the surplus Pu into spent fuel that meets the Spent Fuel Standard. Dependent upon fuel management, it is likely that no additional spent fuel would be generated beyond that of a conventional uranium fuel cycle.

The Department of Energy is committed to waste minimization and waste minimization considerations will be included in the implementation of the selected disposition alternatives. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

PHYSICIANS FOR SOCIAL RESPONSIBILITY, DENVER, CO,
SAMUEL H. COLE
PAGE 2 OF 2

- congruent with nuclear non-proliferation since it treats plutonium as a useful product and would legitimize similar actions by other countries. This would make it difficult for the United States to determine the true motives of plutonium possession by other nations as military use of plutonium could be disguised as civilian use. Second, the MOX fuel option creates an enormous amount of radioactive waste - in a sense diluting the radioactivity of the fuel. Therefore, the DOE is encouraged to adopt a nuclear waste standard in considering its disposition options in which the option chosen must produce the least amount of waste.
- Information is scant on the science behind the deep borehole option. Nevertheless, there are health, safety and environmental concerns that should be thoroughly addressed should this option be explored more closely.
3. Disposition should be congruent with future activities at Rocky Flats: The PEIS must better address how its disposition and storage decisions are congruent with the activities at Rocky Flats. The path forward in the document must address how the work at Rocky Flats fits into that plan. Processing should make the plutonium proliferation resistant.
4. The processing and transport must be kept to a minimum: To protect the health and safety of workers and the public, processing and transportation of plutonium in the PEIS must be kept to a minimum.
5. Plutonium must be subject to outside regulation: DOE's Advisory Committee on External Regulation has recommended independent oversight of DOE's plutonium activities. The PEIS should likewise do the same.
6. Plutonium must be labeled a waste by the DOE: To seriously discourage nuclear non-proliferation in the world, the DOE should determine, for the purposes of this PEIS, that plutonium is a waste, has no value and should be immobilized, perhaps in glass, in extremely secure conditions.

Thank you for your consideration of these comments.

Signed,


Samuel H. Cole
Executive Director

3/08.03.01
cont.

4/01.00.00

5/01.00.00

6/01.06.00

7/01.04.00

M-169

01 00 00 Comment Number 4

The schedule analysis is presented in a separate document along with cost and technical analyses to support the DOE's ROD, which would lay out a path forward for implementing the Proposed Action.

01 00 00 Comment Number 5

Comment noted.

01 06 00 Comment Number 6

Comment noted. DOE is still evaluating external regulatory options for its activities.

01 04 00 Comment Number 7

The determination of whether or not Pu should be considered a waste is beyond the scope of the PEIS. Furthermore, whether or not Pu is a waste will not change the range of disposition alternatives addressed in the PEIS. NEPA requires that the environmental impacts for all reasonable alternatives be considered. While immobilization is clearly a reasonable alternative, so are the Reactor and Borehole Alternatives. The nonproliferation risks of each alternative will be carefully considered and factored into the ROD for disposition. Cost, schedule, and technical analyses have been conducted by DOE and will also be factored into the ROD.

PICARDO, ROBIN, LAS VEGAS, NV
PAGE 1 OF 1

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator's opposition to new missions at NTS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

*For the millionth time!
No nuclear waste dump
in Nevada. We don't want
it, we don't produce it &
it will never be OK.*

1/08.03.01

Robin Picardo

PC-001

POE, W. LEE, JR., AIKEN, SC
PAGE 1 OF 3

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

807 E. Rollinswood Rd
Aiken, S.C. 29801
May 6, 1996

U. S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC 20026-5156

Dear Sir:

Re: Comments on Draft PEIS "Storage and Disposition of Weapons-Usable Fissile Materials"

I would like to provide the Department my comments on the recent PEIS. I have a single comment on my view of what alternative should be selected. I have several comments on the materials presented in the PEIS and how they should be modified to improve the quality of the document.

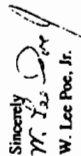
Proposed Action.

The Department should select the MOX alternative for the proposed action. My judgment is based upon the following points.

- The surplused plutonium has large fuel value and should not be discarded. My view is that this plutonium should be fabricated into fuel and used to produce electrical energy. Recycle of the irradiated MOX-SNF should be used again to produce more energy, etc.. As the Department of Energy has indicated the U. S. dependence on imported oil has increased from ~33% to ~67% over the last 15 years. This plutonium should be used to help turn-around this dependence on imported fuel by this country.
- Use of the plutonium can be accomplished in a safe and secure manner. This use will not increase proliferation. It can be safeguarded; all we need do is to turn our energies to developing this approach. This development can be accomplished in the same time that production of MOX fuel takes. Other nations have safely used this recycled plutonium while safeguarding it.
- This turning from an illogical posture (that of not reusing all of our energy sources) will show the world that the United States understands world needs and is prepared to help with premier approaches that meets all of the needs for energy and provides a tight safeguard system to ensure that the surplused weapon materials are not stolen and pose clandestine threats to world security.

1/08.03.01

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The cost-effectiveness of this alternative should include the cost of replacing the energy generated by using the surplus plutonium with fossil fuel at today's oil prices and also at the cost of this replacement oil in say 20-years. Consideration should also be given to costs if the foreign oil producers decide to limit pumping of this oil to raise prices.	2/09.00.08
Specific Comments.	
- Revise the last sentence of the summary to show that when used properly these stocks of weapons-usable materials do not pose a threat to world security. - Page S-4 the PEIS references DOE-STD-3013-94. Please have a copy of that standard sent to me. - In several places in the PEIS (see page S-18 as an example), the statement is made that "because of the high percentage of minority and low populations in certain counties surrounding SRS, the potential exists for these populations to be disproportionately affected by an accident." This statement is not incorrect when all of the information presented in the PEIS is used but it does not apply only to SRS, it applies to most if not all DOE sites. At best, it is inflammatory to the minority residents and points out that in the areas surrounding SRS, minorities are at risk. From my understanding of the executive order pertaining to this subject, it requires DOE to evaluate "highly adverse" and "disproportionate" impacts. This PEIS did not evaluate either of these. Revise to place in perspective and apply to all of the DOE sites in the PEIS. - The PEIS assumes a threshold of 100 person-rem as some standards below which analysis is not required or given. The source and intent of this <100 person-rem floor is unclear. - The schedule for implementing the various alternatives should play a more important roll in the PEIS. It is clear to me that the large driver for this PEIS is the need to get this weapon-usable plutonium under strict control as soon as possible. This raises several questions not addressed with sufficient clarity near the front of this PEIS. Several related points that need addressing early in the report are: - Safeguarding of U. S. governments Pu. - Safeguarding of other governments Pu around the world. As I see it the prime justification for these actions is the Pu stored in the former Soviet countries. If this is the case, the PEIS should show how actions in the U. S. will affect these other countries' protection of their Pu. - The deep borehole technology described in the PEIS seems to be in a very early stage of development and not sufficient for it to be a viable alternative in this PEIS. As I have seen in other projects, a proponent of a new technology underestimates the task of bringing such a technology to fruition and underestimates the associated risks. This section should discuss this item in sufficient detail that the reader can assess the alternative. Environmental effects of this alternative assume only technical risks. What about political risks and stakeholders concern of "disposal - not in my state". The Department has been hung-up on these disposal issues at Nevada for many years.	3/09.08.08
	4/09.09.08
	5/01.00.00
	6/04.00.00
	7/04.03.00
Sincerely  W. Lee Poe, Jr.	M-165

09 00 08 Comment Number 2

By meeting the Stored Weapons Standard, the storage of weapons-usable fissile materials managed by DOE will not pose a threat to world security.

09 08 08 Comment Number 3

The PEIS evaluates demographic data for all of the candidate DOE sites. SRS has potentially affected minority and low-income populations within 80 km (50 mi) of the site. Although the health analysis for SRS indicates that there would be no significant adverse health impacts from operational and accidental releases of hazardous and radioactive materials, the PEIS acknowledges the possibility that dispersion of radioactive emissions could flow in the direction of minority or low-income populations. This could happen if an accident occurred and the wind conditions were unusual. However, the PEIS notes that the probability of such an accident is low and that under average meteorological conditions (based on the prevailing wind direction), accidental release of radiation would not lead to a disproportionate exposure to these populations.

09 09 08 Comment Number 4

The Final PEIS has been corrected. 100 person-rem is not a standard below which analysis is not given or required for NEPA purposes. Proposed 10 CFR 834 (see 58 FR 16268) would require that potential annual population dose be limited to ALARA and generally total effective dose equivalent be limited to 100 person-rem/yr from all pathways combined for DOE activities. The radiation exposure to the public is limited by the maximum individual dose of 100 mrem/yr.

01 00 00 Comment Number 5

Analyses of the cost, schedule, and proliferation impacts are discussed in separate documents to support DOE's ROD. The cost, schedule, and technical analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996. A series of public meetings to discuss the proliferation analysis were conducted by DOE prior to issuance of the Final PEIS.

POE, W. LEE, JR., AIKEN, SC
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04 00 00 Comment Number 6

More detailed information on a borehole technology is available in the Technical Summary Report and related borehole alternative summary reports made available to the public beginning in late July 1996.

04 03 00 Comment Number 7

As described in Section 1.5 of the PEIS, environmental considerations, technical, economic, domestic and international policy, and schedule analyses will support the ROD.

POTTSON, TED, AMARILLO, TX
PAGE 1 OF 1

08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's opposition to new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

Comment ID: P0031
Date Received: May 1, 1996
Name: Father Ted Pottson
Address: 5005 Kinney Road
Amarillo, TX 79107

Transcription:

I'm calling in to say that I am against Pantex having and storing nuclear waste and plutonium near where I live. Actually about four miles away. I as a citizen am against this. Thank you.

1/08.03.01

P-031

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Amarillo Public Meeting Oral Comments - April 22 & 23, 1996	
Public Meeting Comments	
Pantex Site April 22 & 23, 1996	
Evening Meeting - April 22, 1996	
Plenary Session	
C: [Prepared statement of Senator, Mac Thornberry (see attached)].	
C: [Prepared statement of Representative, Larry Combest (see attached)].	
C: [Prepared statement of State Senator, Teel Bivens (see attached)].	
C: [Prepared statement of State Representative, David Swinford (see attached)].	
C: [Prepared statement of Mayor of Amarillo, Kel Seliger (see attached)].	
C: [Prepared statement of City Commissioner, Dianne Bosch (see attached)].	
C: [Prepared statement of Amarillo Economic Development Corporation, Vance Reed (see attached)].	
Evening Meeting Breakout Sessions	
C: Fuel fabrication is not a new technology for uranium oxide, but we are talking about the technology to produce plutonium oxide. Significant changes to the facilities and processes would not be required.	1/06.01.08
C: There would be a one-half percent increase. The language of adverse impact when the impact would not be significant and it is not used at any of the other sites that have a slight increase is very harsh and misleading. (Note: This comment was made after a discussion concerning adverse impacts of water usage at Pantex.)	2/09.04.04
C: If DOE would not build the mixed oxide fuel facility at Pantex then the land would be used for something else. For example, if the land was used for farming, more water would be used than if the land was used for a mixed oxide fuel or storage facility DOE needs to compare	3/09.04.04
AM-001	

Note: A number of documents submitted during the public meetings were recorded as part of the minutes. The same documents, in some instances, were also submitted as hand-ins at the end of the meeting. In those cases, the documents are analyzed once, either as part of the minutes or as stand alone documents.

Listed below are the names of the organizations/individuals who submitted documents as part of the minutes and the page numbers containing DOE's responses to the comments:

U.S. House of Representatives, Congressman William "Mac" Thornberry	3-1088
U.S. House of Representatives, Congressman Larry Combest	3-691
State of Texas, Senator Teel Bivens	3-107
State of Texas, State Representative, David Swinford	3-1003
Amarillo Mayor Kel Seliger	3-107
City of Amarillo, Commissioner Dianne Bosch	3-140
Amarillo Economic Development Corporation, Vance Reed	3-16
No Name Submitted	3-521

06 01 08 Comment Number 1

Fabrication and use of MOX fuel using reactor grade Pu is a mature, industrial scale technology in Europe with at least three vendors actively fabricating MOX fuel. There are some differences introduced by the use of weapons-grade Pu, which DOE is addressing as part of an ongoing weapons-grade MOX fuel development program.

09 04 04 Comment Number 2

The depletion of the Ogallala Aquifer is a serious concern for the Panhandle region. Pantex is the only DOE site considered in this PEIS where depletion of water resources is a concern. Since the Ogallala Aquifer is being depleted (that is, the current withdrawal is exceeding the current recharge), Pantex operations contribute to the depletion of the Ogallala Aquifer and are analyzed in the PEIS.

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the disposition processes with other land usages rather than zero usage. DOE is overreacting to the water usage at Pantex.	3/09.04.04 cont.
C: But it is not a fair perspective, if there is a small change with not a large adverse impact. We (the citizens of Amarillo) are very sensitive, when this language is used against the natural resources that we have. As stated before, the water usage for farming would be for irrigation.	2/09.04.04 cont.
C: DOE needs to clarify predicted water use, define the baseline, and put water use in perspective to other local uses (i.e., irrigation). (Note: This comment summarizes participants' concerns regarding water usage.)	4/09.04.04
C: DOE gives the impression that they have ranked sites. If DOE has ranked the sites then DOE needs to provide the basis for and an explanation about how the ranking will be used.	5/09.00.08
C: DOE should not consider small impacts that have no significant effect. DOE needs to change the language so that true impacts are expressed and insignificant ones are not.	6/09.00.08
Evening Meeting Summary Session	
C: Any person opposed to using Pantex for any of these processes would oppose anything proposed in Antarctica.	7/08.03.01
C: By trading one fuel for another, the waste would be different. In order to replace mining and milling, the United States would have to build a mixed oxide fuel fabrication facility, which would increase the amount of waste.	8/09.11.08
C: I am concerned about using the mixed oxide fuel process, which will contaminate the plutonium, rendering it no longer as a proliferation threat. Verification could accomplish this without the additional waste.	9/08.03.01
Morning Meeting - April 23, 1996	
Plenary Session	
C: The slide from the storage and disposition brief showed public input to the Record of Decision in reference to the preferred alternative. However, there has been no discussion on what the preferred alternative might be and the public is trying to provide comments. During the discussions last night on this issue there were no answers. DOE has seemed to make the	10/08.00.00
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09 04 04 Comment Number 3

The disposition environmental analyses in the PEIS are provided so that the decisionmaker can choose a disposition technology or combination of technologies. Site-specific analyses were provided in this document to provide a range of environments that could be affected. All comparisons are made to the No Action Alternative, so that a conservative analysis of the impacts is performed.

09 04 04 Comment Number 4

The No Action Alternative water use estimates for the year 2005 were used as the baseline against which each of the alternatives are compared in Chapter 4. Consistent with NEPA, the potential for impacts from operations at Pantex is analyzed; analysis of users outside the ROI is not within the scope of this PEIS. Since Pantex contributes to the depletion of the Ogallala Aquifer, the impacts are analyzed in the PEIS.

09 00 08 Comment Number 5

The Department of Energy did not intend to give the perception that the sites were ranked. Based on comments received, the Summary of the Draft PEIS was revised. All revisions made appear in the Summary of the Final PEIS.

09 00 08 Comment Number 6

Based on comments received, the Summary of the Draft PEIS was revised. All revisions made appear in the Summary of the Final PEIS.

08 03 01 Comment Number 7

The Department of Energy acknowledges the commentor's support of Pantex. Decisions related to future missions at Pantex will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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preferred alternative moot to this process.	10/08.00.00 cont.
Morning Meeting Breakout Sessions	
C: I urge DOE to collocate the storage facilities for strategic and surplus materials.	11/08.03.01
C: The radiological impacts chart showed that for storage there would be minimal impacts and for disposition the impacts would be within standards.	
C: Can DOE reference the standard or criteria that reached this basis. (Note: This comment was related to a discussion on acceptable radiation exposure levels to workers.)	12/09.09.04
C: There is not any reason not to consider long-term storage or disposition at Pantex.	7/08.03.01 cont.
C: The wording within the document should be checked. The summary says there are adverse impacts to water usage at Pantex.	13/09.04.04
Morning Meeting Summary Session	
No summary session	
Afternoon Meeting- April 23, 1996 Plenary Session	
C: [Prepared statement of Source Unknown (see attached)]	
Afternoon Meeting Breakout Sessions	
Q: Executive Order 12898 addresses the Federal actions to be taken on environmental justice. A February 11, 1994 memo from President Clinton to all government agencies and department heads requires that the socioeconomic effects at site communities not just health effects are to be analyzed? Why have health effects only been covered in the draft Programmatic Environmental Impact Statements? (Note: This question did not appear to be answered in the course of the meeting.)	14/09.12.08
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09.11.08 Comment Number 8

The PEIS acknowledges the fact that constructing and operating a MOX fuel fabrication facility would increase the wastes generated at any sites selected for analyses. The wastes generated for the MOX fuel fabrication facility are presented in Section E.3.2.3. The impacts associated with operating the MOX fuel fabrication facility are presented in Section 4.3.5.1.10.

08.03.01 Comment Number 9

The Department of Energy acknowledges the commentor's support for the Vitrification Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08.00.00 Comment Number 10

A Preferred Alternative was not identified in the Draft PEIS for two reasons. First, DOE wanted to obtain public input on the alternatives before identifying a Preferred Alternative. Second, DOE wanted to develop additional information on technical, cost, schedule, and policy considerations independent of the NEPA analyses. The results of the technical, cost, and schedule analyses were issued by DOE beginning in July 1996, and the results of the nonproliferation study were issued in October 1996. This information will be used in reaching a ROD.

08.03.01 Comment Number 11

The Department of Energy acknowledges the commentor's support for the Collocation Alternative. Decisions on storage alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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C: The cumulative potential for adverse impacts in the storage and disposition summary show that Pantex has the highest impacts. I know adverse is a technical term used by the National Environmental Policy Act, but it is a scary and emotional term. Can DOE re-examine this and state exactly what adverse means.

C: I am concerned about the cumulative impacts in the storage and disposition document and summary, the document itself and the summary do not relate. I can't understand the basis for the statement adverse impacts? On pages 18, 19, 20, 28 and 31 of the summary, "could have adverse impacts" is stated for several sites, however, on S-72 "sites are expected to comply with ambient air standards and guidelines" both of these statements are referring to the upgrade alternative. I do not understand why Pantex, Savannah River Site, Idaho National Engineering Laboratory, and Richland are singled out.

Q: The Council on Environmental Quality Guidelines published in 40 CFR 1500 defines cumulative impact as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over period of time. Why is there no analysis of the incremental socioeconomic impact of this action when added to other past and present actions such as the cancellation and closure of several government programs? (Note: This question did not appear to be answered in the course of the meeting.)

C: DOE needs to address the issue of the definition for adverse impacts with the Council on Environmental Quality.

**Afternoon Meeting
Summary Session**

No summary session

The meeting was recessed, DOE representatives stayed until the 6 p.m. adjournment. During that time one individual came and a statement was presented to DOE by Cecil Wilson concerning the newspaper article by Mark C. Self. (Copy attached.)

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09 09 04 Comment Number 12

The Federal radiation exposure limit for an individual worker is 5,000 mrem/yr which is set forth in the Federal Code (10CFR 835). This is the basis for limiting the radiation exposure to workers on DOE sites. Furthermore, DOE has also established an administrative exposure level of 2,000 mrem/yr (DOE/EH 0256T) for the workers. DOE requires all sites to maintain worker radiation exposure levels ALARA, preferably below the administrative level.

09 04 04 Comment Number 13

Since the Ogallala Aquifer is being depleted (that is, the withdrawal is exceeding the recharge), Pantex operations contribute to the depletion of the Ogallala Aquifer and therefore are analyzed in the PEIS.

Additional groundwater drawdowns from the Proposed Actions for the various long-term storage alternatives are expected to be very small. The Summary was revised to emphasize that, under the No Action Alternative, Pantex's water use from the Ogallala Aquifer is expected to decrease significantly by the year 2005, and that additional withdrawals attributed to the long-term storage alternatives are expected to be very small (less than 0.5 inches [in]/yr).

09 12 08 Comment Number 14

Socioeconomic impacts are analyzed in detail in all of the environmental statements noted by the commentator. The PEIS analyzes potential socioeconomic impacts for all of the Proposed Alternatives. For those alternatives that would add a new mission to a particular DOE site, there would be no adverse socioeconomic impacts. In fact, the analyses indicate that the impacts of these alternatives would be small but beneficial to the affected regional economies. There would be no environmental justice issues associated with these alternatives. For those alternatives involving phaseout of storage facilities, the job loss would be very small in all cases except RFETS. Even in the case of RFETS storage facility phaseout, the employment loss would only have a minimal impact on the local communities and the regional economy. Hence, there would be no environmental justice impacts from these alternatives.

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Thank you for allowing me the opportunity to make a few remarks.

Many of the others who will testify will discuss the outstanding record of the Pantex plant, the unparalleled level of community support which the plant enjoys, and the willingness to consider other missions as we sort out the nuclear weapons complex after the Cold War.

I'm going to focus on some broader questions which certainly affect Pantex but also the larger security needs of the country.

I do so not because I disagree with the other points or because I don't think they are important.

Pantex's record, its people, its community support, and its openness to other possibilities are its key strengths and no one else can match them.

But during my tenure in Congress, as a member of the House Committee on Energy and Commerce, I have attempted to make a serious study of our nuclear weapons complex, in part because I represent one of its crown jewels and in part because I believe that a modern, effective nuclear capability is absolutely necessary to our national security.

I won't say that I have learned all I can or intend to, and I won't represent to you that I know all the answers during this time of change and turmoil.

But I am confident that I know enough to raise some serious questions that relate to the subject today and to our children's security.

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09 00 08 Comment Number 15

Based on comments received, the Summary was revised. The related text was revised to clarify the comparison of impacts and to delete references to "adverse" impacts. Also, language in the cumulative impacts section of the Summary has been revised to better reflect the impact analysis in Section 4.7 of the Final PEIS.

09 08 04 Comment Number 16

The proposed storage alternatives at Pantex would involve relatively small numbers of new workers and would not have a large impact on the regional economic area. In fact, adding new missions at Pantex would counter the projected decrease in workforce over the next decade that will result from the reconfiguration of the nuclear weapons complex. The Phaseout Alternative would involve the loss of only five jobs and even with projected future reductions, the cumulative impact would be small. These issues are discussed in Section 4.7.2.4.8 of the PEIS.

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This is, of course, a time of great change brought about by the end of the Cold War, by the fact that the DOE was not as careful in the past as it should have been, and by this administration's decision to stop all nuclear testing.

Stockpile Stewardship and Stockpile Management

In my view, stockpile stewardship and stockpile management are important for the nation regardless of whether we conduct nuclear tests or not.

We should use a number of methods to make as sure as we can that our nuclear weapons are safe and reliable.

In doing so, we are making a serious mistake if we neglect to factor in the importance of highly skilled workers at production plants.

I tend to agree with those who argue that we need smart people in labs and maybe even that we need smart people at two labs to compete against one another.

But every bit as much as we need smart people in labs, we need experienced, knowledgeable people in production plants who know how to take a design or a procedure and produce a product that meets the requirements safely and efficiently time after time so that we have weapons that are safe and reliable on which we can stake our children's freedom.

That's what people at plants like Pantex do.

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It's like if you're building a house,
you need architects to draw up the blueprints and to consult with,
but there is absolutely no substitute
for skilled carpenters, and plumbers and painters
who know how to get the work done,
who know what problems there may be
in translating the blueprints and procedures into precise components;
and who have a proven track record
of having done it --- time after time.

I am afraid that an undercurrent in DOE today,
that sometimes even rises to the surface,
is a lack of appreciation
for the importance of those workers on the assembly line
at Pantex and elsewhere.

If we lose them, we are a weaker nation
and no number of PhD's at the labs
will replace what we've lost.

I find it incredible that DOE would ask more and more
of at least one of our production plants
and yet allocate less money for it to fulfill its mission.

If we can't keep the trained, experienced personnel at Pantex,
the country won't reach its goals for Stockpile Stewardship and Mgmt
We will begin to lose confidence in our nuclear deterrent,
and we will have been penny wise and pound foolish.

I am also concerned
that we are just focusing on dragging out the life
of current weapons
without taking positive steps

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toward replacing our existing weapons
which will all too soon be at the end of their intended design life.

A real question is whether we will be able to build nuclear weapons again
and how.

There are many improvements which could be made now,
others which we will want to make in the near future,
and all the while we have to be prepared

to deal with changes in Russia, China and elsewhere.
I'm not sure we're ready.

High Explosives

Let me address the one issue in the PEIS
for which no preferred alternative was included,
that is high explosives.

When you compare apples to apples,
no one seriously disputes
that the most cost effective option
is retaining the existing mission at Pantex.

The sole justification to moving high explosives
to Los Alamos and Livermore
is that we need to keep knowledge and competence
of high explosives in the Labs.

OK - but we need to keep it at the production level too.

You can do all the research you want
and have all the knowledge you can handle,
but if you can't reliably and safely translate that knowledge
into real production,
you have nothing.

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There is no reason in the world
that the Labs can't continue to send people to Pantex as needed
for the manufacture of high explosives,
but to remove high explosives
completely out of the production complex
would be a big mistake.

Disposition -

The issue of what we're going to do
with the excess plutonium and uranium is of key concern here.

As you know, we've got several thousand pits stored here
with more being added every day.

I am disappointed that the PEIS gives so little guidance
on what's to be done.

We need to get on with making these key decisions.

Two weeks ago at Los Alamos,
I was able to see firsthand some of the work involved in the Aries project.

We have some very promising technologies,

but the country needs leadership.
and our area needs confidence that DOE knows what it is doing
and is doing the right thing.

As long as I am in the Congress,

I will be involved in making these decisions

and I will do everything I can

to see that our area is protected,

to see that our nation is secure,
and to see that our children have the opportunity to live in freedom.

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U.S. REPRESENTATIVE LARRY COMBEST
(TEXAS--19)
THE U.S. DEPARTMENT OF ENERGY'S
PUBLIC HEARINGS
AMARILLO, TEXAS
APRIL 22, 1996

I would like to thank the Department of Energy (DOE) for holding these series of public hearings in Amarillo so that our Panhandle neighbors can have an opportunity to share their views on the DOE's Programmatic Environmental Impact Statements (PEIS) on Stockpile Stewardship and Management (SSM) and Storage and Disposition (SDP) of Weapons Usable Fissile Materials. I am pleased to be a participant in these public hearings to discuss Pantex's future.

Since the Pantex Plant's earliest origins in World War II as a site that built conventional bombs for the U.S. Army, countless numbers of individuals from across the Panhandle have made instrumental contributions to the United States' winning of the Cold War. In the post-Cold War era, Pantex workers have once again answered the call to duty in peacetime and found a new role in disassembling nuclear weapons. I stand here today to tell you that Pantex is not only ready, but uniquely qualified to continue to enhance its role as a vital component of our nation's nuclear weapons industrial base as we prepare for our national security needs for the 21st Century.

I can fully appreciate the DOE's responsibility to reconfigure the country's nuclear weapons production complex for the 21st Century. As the Chairman for the U.S. House of Representatives' Permanent Select Committee on Intelligence, I recently conducted a year-long review of what is commonly referred to as the "intelligence community," the classified government agencies that collect information to advise the President and Congress on actions of foreign governments and terrorists. The legislative proposal I introduced as a result of this year-long review will ready the nation's secret intelligence-gathering efforts for the 21st Century. The approach I took in crafting this proposal brings these agencies to end unnecessary duplication and work efficiently for better intelligence to keep America safe from nuclear proliferation, from terrorism, and from narcotics. America continues to need strong, highly-capable and ever-flexible intelligence community to provide the earliest-possible warning and analysis in a world that is still a very dangerous place. I want our nation to continue to meet the challenges of the next century, we should ask no less of our nation's nuclear weapon complex.

In the post-Cold War era, many have called for a retreat of our resources and readiness regarding national security. I believe that the post-Cold War era with nuclear proliferation leaves our nation more vulnerable than ever. Now that we no longer have the Soviet Union, we never know where our next threat is going to

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08 03 01 Comment Number 17

The Department of Energy acknowledges the commentor's support of continued and new missions at Pantex. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national considerations, and public input.

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come from. I urge the DOE to reject these specious arguments, and ensure that the nuclear weapons complex of the 21st century maintains our nuclear deterrent for the foreseeable future. With nuclear weapons remaining a vital component of our national security into the 21st Century, Pantex is the only facility that can fulfill this mission.

However, first and foremost I am adamant that any current and future functions at Pantex will be conducted in a safe and environmentally sound manner. The first priority for any expansion at Pantex is that it be implemented in a way that does not impair the health or safety of area residents or have an adverse affect on the environment. I believe these points serve as a prerequisite to any current or future activities at Pantex.

I do not take these points lightly. I was born and raised in the Panhandle. I grew-up not far from the Pantex plant on a family farm. I would never support any proposal or effort that would endanger the lives or environment of this region. This is my home and members of my family reside here.

I am proud of the Pantex plant's reputation as one of the cleanest facilities in the DOE's nuclear weapons complex. They have been good stewards of the land. As a matter fact, if I were not in Amarillo today talking about the importance of Pantex to our country, I would be singing their praises from back in Washington, D.C. Today, in Washington, the DOE's Pantex Plant is being recognized as a "Model Facility" and will receive the "White House Closing the Circle Award" for its efforts on waste minimization and recycling activities. Only twenty-two federal facilities from across the country received a "Closing the Circle" award. Clearly, Pantex takes its environmental safety responsibilities very seriously and I am pleased that this national award is highlighting their hard work.

In the DOE's draft PEIS, I am pleased that the department selected Pantex as the preferred alternative for assembly and disassembly. Wisely abandoning earlier plans to transfer those functions to the Nevada Test Site (NTS) which would have been cost prohibitive and painfully inadequate to meet future needs. In addition, I am pleased the DOE draft recognized the importance of Pantex to the country's nuclear weapons complex.

Pantex is perhaps the most cost-effective alternative for any new construction of Stockpile Stewardship and Management facilities. Among many of the reasons, labor, costs, utility rates and water and land availability at Pantex, as well as public and political support, are more agreeable than those at any other site in the complex. Pantex should be considered as an alternative site for future defense-related facilities to complement activities at the national labs. Location of additional defense-related activities at Pantex would ensure that core technical capabilities are preserved at a location that can secure them at the most efficient cost to American taxpayers. In deliberations, the DOE

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cont.

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should insist that budgetary comparisons between Pantex and other sites are accurate, and include capital, transportation, training, remediation, and other costs.

With the production assembly and disassembly functions remaining at Pantex, the high explosives functions should be present at the corresponding site. Even the DOE draft admits that Pantex must retain high explosives capabilities to process the inventories already on site from dismantling. Therefore, the least expensive alternative is to maintain high explosives functions at Pantex. I would also take issue with the draft PHS statement that there are no advantages to siting high explosives at Pantex as opposed to the national labs. The capital outlay alone necessary for transfer is cost prohibitive. Also of importance, should future need arise for new weapons production it will be critical to have the high explosives facilities at the weapons production and assembly site.

As the DOE considers its options regarding the dismantling of a significant portions of the nuclear stockpile and searches for productive and environmentally sound uses for the dismantled components of our nuclear arsenal, Pantex and its functions are uniquely qualified for these new missions. Pantex has the necessary safety, security and surveillance capabilities to accommodate and expanded role with minimal costs to the federal government.

Once again, I would like to thank the Department of Energy for holding these hearings on the future of Pantex. I firmly believe the Pantex Plant will continue to play a vital role in our nuclear weapons complex well into the 21st Century. I applaud all of you who are here tonight to make your views known on this critical issue. I pledge to you that I will work with Representative Mac Thornberry and the rest of the Texas delegation in Congress to ensure that Pantex is a vital component of our country's nuclear weapons industrial base. I appreciate the opportunity to participate in this public hearing, and respectfully request the DOE to consider my recommendations. Thank you.

AM-001

SENATOR TEEL BIVINS
DISTRICT 31

COMMITTEES:

Finance
Education
Natural Resources
Sub-Committee on Agriculture
Chair: Norm-Allen



*The Senate of
The State of Texas*

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April 22, 1996

U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, DC 20026

Thank you for the opportunity to comment on the U.S. Department of Energy's Programmatic Environmental Impact Statements on Stockpile Stewardship and Management and Storage and Disposition of Weapons-Usable Fissile Materials. Please also consider this my comment on the Pantex Site-Wide Draft Environmental Impact Statement, since most of the issues addressed in these documents are identical.

First and foremost, I am adamant that any current and future functions at Pantex will be conducted in a safe and environmentally sound manner. Our first priority is to ensure any expansion at Pantex be implemented in a way that does not impair the health or safety of area residents or have an adverse effect on the environment. These goals serve as a prerequisite to any current or future activities at Pantex, including expansion.

I. Generally, I am pleased that DOE selected Pantex as the preferred alternative for assembly/disassembly, thereby abandoning earlier plans to transfer those functions to the Nevada Test Site which would have been cost prohibitive and never been adequate to meet future needs. However, by failing to recognize Pantex as the preferred candidate site for new and/or consolidated stockpile management facilities, the DOE overlooks the best site for maintaining the integrity of the U.S. nuclear stockpile and attaining maximum efficiencies and cost savings.

II. SSM PEIS:

1. Pantex is the best place to site new construction/stewardship activities. Pantex is perhaps the most cost-effective alternative for any new construction of SSM facilities. First, labor costs, utility rates, and water and land availability at

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Pantex, as well as public and political support, are more amenable than those at any other Complex site. DOE makes no mention of a strategic plutonium reserve that is necessary to meet future national security needs, even though the PEIS mentions that strategic storage should be co-located with disassembly. Pantex should be the preferred site for such a mission in coordination with its management functions. In its deliberations, DOE should insist that budgetary comparisons between Pantex and other sites are accurate, and include capital, transportation, training, remediation and other costs.

2. Pantex is the best site to continue High Explosives fabrication. Consistent with the strengths identified above for increased stewardship and management duties, the high explosives functions should also remain at Pantex. Because the production assembly/disassembly functions remain at Pantex, the HE fabrications duties should be present at the corresponding site. After all, the SSM Draft admits that Pantex must retain HE capabilities to process the inventories already on site from dismantling. Therefore, the least expensive alternative is to maintain HE functions at Pantex. I adamantly disagree with the statement in the draft PEIS that there are no advantages to siting high explosives at Pantex as opposed to the national labs. The capital outlay alone necessary for transfer is cost prohibitive. In addition, should future need arise for new weapons production, it will be critical to have the HE facilities at the weapons production/assembly site. More over, this is a highly trained group of workers at Pantex with vast experience in HE fabrication. Creating a new workforce at another location would be inefficient, expensive and potentially dangerous.

III. Fissile Materials (Plutonium) Storage and Dispositions PEIS. As the sole DOE-authorized facility for the assembly and disassembly of nuclear weapons, Pantex has historically handled storage in a safe and efficient manner for more than 40 years. Once again, acknowledging cost saving considerations, Pantex could continue to store plutonium, which is already at the site, and upgrade facilities for any and all storage options being considered by DOE with minimal cost and difficulty. Pantex currently safehouses more than 8,000 surplus pits and plans are being made to ship additional pits from Rocky Flats to Pantex. It makes little sense to re-create storage facilities at another site and the unnecessarily transport large amounts of plutonium across the country from Pantex. The budgetary and political costs for such a decision would be enormous.

Of the three disposition options identified in the PEIS, it appears that only mixed-oxide fuel fabrication would be relevant to Pantex. Because this is an experimental procedure, I believe three criterion are critical before it be commenced: 1) It must be demonstrated beyond the shadow of a doubt that this plutonium processing can be done safely and in an environmentally sound fashion. The sad truth is DOE's history with processing plutonium is not a good one.

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2) The community of the Texas Panhandle must come together and support this technology being conducted at the Pantex Plant. Pantex currently enjoys widespread community support. If this technology meets criteria number one, I anticipate that the support could also go to the implementation of a mixed-oxide fuel processing program. 3) Independent regulatory oversight is more critical for disposition than any other area of DOE nuclear materials operations. From a public policy standpoint, it makes no sense that there is no independent regulatory oversight of DOE's handling of nuclear materials. (While Congress created the Nuclear Facilities Safety Board, it lacks the authority to shut down a plant.) Because of the regulatory morass that currently exists in the State of Washington, I believe that this regulatory oversight should be vested in one agency outside of the DOE. The lead agency could be a state agency or a federal agency. The lead agency would then contract with the other state and federal agencies needed to provide seamless regulatory oversight without overlap of function and jurisdiction.

IV. Conclusion. Based upon these reasons, I respectfully urge DOE to designate Pantex as the preferred alternative site for all existing and new stockpile management and stewardship functions, as well as, consolidation of all plutonium storage. Thank you for the opportunity to comment on these documents.

Sincerely,



Teel Bivins

TB/tsb

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DAVID SWINFORD
STATE REPRESENTATIVE

COMMITTEES
APPROPRIATIONS
AGRICULTURE AND
LIVESTOCK
LOCAL AND CONSENT
CALENDAR

April 15, 1996

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INFORMATION

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Office of Reconfiguration
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U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, D.C. 20026

Re: Comment on Stockpile Stewardship and Management (SSM) and Storage and Disposition (S&D) of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statements (PEISs).

Thank you for the opportunity to comment on the U.S. Department of Energy's (DOE) Programmatic Environmental Impact Statements (PEISs) on Stockpile Stewardship and Management (SSM) and Storage and Disposition (S&D) of Weapons-Usable Fissile Materials. Please also consider this my comment on the Panlex Site-Wide Draft Environmental Impact Statement, since most of the issues addressed in these documents are identical.

First and foremost, I am adamant that any current and future functions at Panlex will be conducted in a safe and environmentally sound manner. Our first priority is to ensure any expansion at Panlex be implemented in a way that does not impair the health or safety of area residents or have an adverse effect on the environment. These goals serve as a prerequisite to any current or future activities at Panlex, including expansion.

I am pleased that DOE selected Panlex as the preferred alternative for assembly/disassembly, thereby abandoning earlier plans to transfer those functions to the Nevada Test Site (NTS) which would have been cost prohibitive and never been adequate to meet future needs. However, by failing to recognize Panlex as the preferred candidate site for new and/or consolidated stockpile management facilities, the DOE overlooks the best site for maintaining the integrity of the U.S. nuclear stockpile and attaining maximum efficiencies and cost savings.

Panlex is perhaps the most cost-effective alternative for any new construction of SSM facilities. First, labor costs, utility rates, and water and land availability at Panlex, as well as public and political support, are more amenable than those at any other Complex site. It is appropriate to consider Panlex as an alternative site for all future defense-related facilities to

DISTRICT #1
POTTER AND MOORE COUNTIES

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complement activities at the national labs (such as the planned Atlas Facility and plutonium pit fabrication site at Los Alamos National Laboratory). DOE makes no mention of a strategic plutonium reserve that is necessary to meet future national security needs, even though the PEIS mentions that strategic storage should be co-located with disassembly. Pantex should be the preferred site for such a mission in coordination with its management functions. The location of additional defense-related activities at Pantex would ensure that core technical capabilities are preserved at a location that can secure them at the most efficient cost to the American people. In its deliberations, DOE should insist that budgetary comparisons between Pantex and other sites are accurate, and include capital, transportation, training, remediation and other costs.

Consistent with the strengths identified above for increased stewardship and management duties, the high explosives functions should also remain at Pantex. Because the production assembly/disassembly functions remain at Pantex, the high explosives fabrications duties should be present at the corresponding site. After all, the SSM Draft admits that Pantex must retain high explosives capabilities to process the inventories already on site from dismantling. Therefore, the least expensive alternative is to maintain these functions at Pantex. I adamantly disagree with the statement in the draft PEIS that there are no advantages to siting high explosives at Pantex as opposed to the national labs. The capital outlay alone necessary for transfer is cost prohibitive. In addition, should future need arise for new weapons production, it will be critical to have the high explosives facilities at the weapons production assembly/disassembly site.

As the sole DOE-authorized facility for assembly and disassembly of nuclear weapons, Pantex has historically handled these functions in a safe and efficient manner for more than 40 years. One of the challenges faced after dismantling a significant portion of the nuclear stockpile is processing or disposal with the materials that remain. The DOE is considering several options. Once again, acknowledging cost savings considerations, Pantex could continue to store plutonium which is already at the site and upgrade facilities for any and all storage options being considered by DOE with minimal cost and difficulty. Pantex currently safeguards more than 8,000 surplus pits and plans are being made to ship additional pits from Rocky Flats to Pantex. It makes little sense to re-create storage facilities at another site and then unnecessarily transport large amounts of plutonium across the country from Pantex. The budgetary and political costs for such a decision would be enormous. Because of these costs, Pantex also should be designated the preferred site for any disposition options and related functions. It makes budgetary and policy sense to site disposition where storage already exists. Furthermore, it makes no sense from any perspective, budget or otherwise, to site strategic storage at one site and surplus at another. Pantex should be selected for both storage functions. Pantex has the necessary safety, security, and surveillance capabilities to accommodate an expanded role with minimal costs and it is the production site closest to Los Alamos, the planned pit fabrication site.

Based upon these reasons, I respectfully urge DOE to designate Pantex as the preferred alternative site for all existing and new stockpile management and stewardship functions as well as consolidation of all plutonium storage and disposition and any related functions. Thank you for the opportunity to comment on these documents.

Sincerely,



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CITY OF AMARILLO

KEL SELIGER
MAYOR

May 3, 1996

U.S. Department of Energy
Office of Reconfiguration
P.O. Box 3417
Alexandria, VA 22302

U.S. Department of Energy
Office of Fissile Materials
P.O. Box 23786
Washington, DC 20026

Re: Comment on Stockpile Stewardship and Management (SSM) and Storage and Disposition
(S&D) of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact
Statements (PEISs).

Dear Sirs:

Thank you for the opportunity to comment on the U.S. Department of Energy's (DOE)
Programmatic Environmental Impact Statements (PEISs) on Stockpile Stewardship and
Management (SSM) and Storage and Disposition (S&D) of Weapons-Usable Fissile Materials.
Also, please consider these my comments for the PanTex Site-Wide Environmental Impact
Statement (SWEIS).

As the mayor of Amarillo, I have an obvious personal stake in the activities at Pantex as
this plant is the largest employer in the region. But my first and foremost responsibility is to the
welfare of the people and environment which is why I am adamant that any current and future
functions at Pantex will be conducted in a safe and environmentally sound manner. While the
Amarillo economy would surely benefit from an expansion of Pantex, my first priority is to
ensure any expansion be implemented in a way that does not impair the health or safety of area
residents or have an adverse affect on the environment.

That being said, I noted with great interest at the April 22-23 hearings that many of our
residents who make their living "off the land" (including public officials such as Congressman
Mac Thornberry and St. Rep. David Swinford) have recognized DOE's findings that there are
"no significant impacts" of any planned or current activities at Pantex. While the safeguarding
the environment is a prerequisite to any current or future activities at Pantex, I want to ensure
that Pantex is not "passed over" for any functions which could be performed safely. Further,

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such incorrect applications of NEPA serve to mislead, and in some cases unjustly concern, our residents. I urge DOE to correct its findings which unfairly discriminate against Pantex by rankings which are not based on "significant" impacts.

I. Generally. By failing to recognize Pantex as a candidate site for new stockpile management facilities, the DOE overlooks the best choice for consolidation of functions to maintain the integrity of the U.S. nuclear stockpile and attain maximum efficiencies and cost savings. Pantex played an important role in our Cold War victory and the plant will continue to serve as the sole DOE site for maintaining a safe and reliable nuclear deterrent to meet our national security needs.

II. SSM PEIS:

1. Pantex is the best place to site new construction/stewardship activities. I support DOE's finding that Pantex is the best site for assembly/disassembly and related management functions. Pantex is perhaps the most cost-effective alternative for any new construction of SSM facilities. First, labor costs, utility rates, and water and land availability at Pantex, as well as public and political support, are more amenable than those at any other Complex site. The location of new or consolidated activities at Pantex would ensure that core technical capabilities are preserved at a location that can secure them at the most efficient cost to the American people. In this regard, I recall, at the 1995 Notice of Intent hearings in Amarillo, that DOE said it "will not build duplicate facilities, unless DOE decides to do so." If I ran the City of Amarillo this way, we would be swimming in red ink. In its deliberations, DOE should insist that budgetary comparisons between Pantex and other sites are accurate, and include capital and transportation costs.

2. Pantex is the best site to continue High Explosives fabrication. Consistent with the strengths identified above for increased stewardship and management duties, the HE functions should also remain at Pantex. Since assembly/disassembly functions will remain at Pantex, it follows that HE fabrications duties should be present at the same site. Should the need arise for new weapons production, it will be critical to have the HE facilities at the production site. Further, DOE officials at the April 22-23 hearings admitted that it would cost more to move these functions to the labs, and that the labs lacked the critical quality assurance capability which Pantex already possesses. How then can DOE assert that there is no cost advantage to either site? Again, DOE is ignoring not only the cheapest site, but the best site for maintaining our nuclear deterrent.

III. Fissile Materials Storage and Disposition PEIS. As the sole DOE-authorized facility for assembly/disassembly for nuclear weapons, Pantex has historically handled these functions in a safe and efficient manner. Once again, acknowledging cost savings considerations, DOE should maintain the current storage of surplus and Strategic Reserve plutonium which is already at the site and upgrade facilities for expanded long-term missions. Pantex currently safeguards more than 8,500 surplus pits and plans are being made to ship the pits from Rocky Flats to Pantex. It makes little sense re-locate storage facilities at another site and then transport

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large amounts of plutonium across the country from Pantex. DOE said at the hearing "it made sense" to collocate strategic storage and assembly/disassembly to minimize transportation, and to collocate strategic storage with surplus storage, since the strategic stockpile may be declared surplus at some point. DOE should not only recognize that storage should follow disassembly, but also that certain disposition options should follow storage to minimize transportation and other costs. In addition, since most of the plutonium deemed surplus is already at Pantex, and given Pantex's close proximity to LANL (the new site for pit fabrication), it makes practical and economic sense to site any plutonium disposition functions at Pantex.

IV. Site-Wide EIS. I am concerned about the "plane crash" analysis. As Mayor, I have been deeply involved in efforts to reduce overflights over the plant, and other preventative measures. How can it be that the probability of a crash causing a release has increased since your 1994 Finding of No Significant Impact, after Pantex and the Amarillo Airport? Even the DOE officials at the hearings conceded that their analysis had serious problems, and needed to be corrected. I urge your office to correct these errors, and act to avoid wrongfully depriving Pantex of future functions for which it may be selected.

V. Conclusion. Based upon these reasons, I respectfully urge DOE to designate Pantex as the preferred alternative site for all existing and new stockpile management functions as well as consolidation of plutonium disposition and control. Thank you for the opportunity to comment on these reports.

Yours truly,


Keli Seliger
Mayor of Amarillo

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HON. DIANNE BOSCH
CITY COMMISSIONER
CITY OF AMARILLO, TEXAS

COMMENTS ON THE STOCKPILE STEWARDSHIP AND MANAGEMENT
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT,
STORAGE AND DISPOSITION OF FISSILE MATERIALS PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT AND
PANTEX SITE-WIDE ENVIRONMENTAL IMPACT STATEMENT

THANK YOU FOR THE CHANCE TO ADDRESS THE DEPARTMENT OF
ENERGY IN THIS INTERACTIVE WORKSHOP FORMAT. AS AN
AMARILLO CITY COMMISSIONER SINCE 1989, I HAVE WITNESSED
COUNTLESS D.O.E. HEARINGS ON PANTEX. THE GIVE-AND-TAKE
BETWEEN THE AUDIENCE AND THE D.O.E. OFFICIALS IS VERY
INFORMATIVE TO EVERYONE IN ATTENDANCE. THE D.O.E. IS TO BE
APPLAUDED FOR THE USE OF AN INTERACTIVE FORMAT, AND SHOULD
CONTINUE TO USE IT IN FUTURE HEARINGS.

THE D.O.E. IS ALSO TO BE APPLAUDED FOR THE OPEN MANNER WITH
WHICH IT HAS, AND CONTINUES TO, ADDRESS LOCAL
ENVIRONMENTAL CONCERNS. WE ARE ALSO THANKFUL THAT GOOD
MANAGEMENT AT PANTEX BY THE D.O.E.'S CONTRACTORS, MASON &
HANGER AND BATTLE, HAS PREVENTED PANTEX FROM HAVING
ENVIRONMENTAL PROBLEMS OF THE TYPE AND MAGNITUDE FOUND
AT OTHER D.O.E. SITES. AS IS EVIDENT BY THE LARGE TURNOUT
TONIGHT, THIS COMMUNITY STRONGLY SUPPORTS PANTEX, AND THIS

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SUPPORT COMES IN LARGE MEASURE FROM THE D.O.E.'S
COMMITMENT TO OUR LOCAL ENVIRONMENT. THAT CONTINUED
COMMITMENT TO THE ENVIRONMENT IS CRITICAL FOR COMMUNITY
SUPPORT OF ALL CONTINUED OR NEW MISSIONS AT PANTEX.

REGARDING THE STOCKPILE STEWARD SHIP AND MANAGEMENT PEIS,
I STRONGLY SUPPORT THE CHOICE OF PANTEX AS THE PREFERRED
ALTERNATIVE FOR THE ASSEMBLY AND DISASSEMBLY MISSION. THIS
COMMUNITY IS EXTREMELY PROUD THAT PANTEX PLAYED AN
IMPORTANT PART IN WINNING THE COLD WAR, AND WILL CONTINUE
TO PLAY A CRITICAL ROLE IN REDUCING THE SIZE OF THE NATION'S
NUCLEAR ARSENAL IN THE POST-COLD WAR PERIOD. KEEPING THIS
MISSION AT PANTEX IS NOT ONLY THE RIGHT CHOICE FOR AMARILLO,
IT ALSO MAKE SENSE FROM A NATIONAL PERSPECTIVE BECAUSE IT
MAINTAINS A CONTINGENT PRODUCTION CAPABILITY, AND IT SAVES
MORE THAN 1.5 BILLION DOLLARS WHEN COMPARED TO THE COST OF
TRANSFERRING THE WORK TO THE NEVADA TEST SITE.

AS LONG AS WE ARE ON THE SUBJECT OF COST SAVINGS AND
RETENTION OF PRODUCTION CAPABILITY, THE D.O.E. MUST NOT LET
THE HIGH EXPLOSIVE (H.E.) FABRICATION MISSION BE MOVED FROM
PANTEX. PANTEX EMPLOYEES HAVE SUCCESSFULLY PERFORMED
THIS MISSION FOR MORE THAN FORTY YEARS, AND THERE IS

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ABSOLUTELY NO REASON FOR THIS WORK TO BE MOVED. WHEN THE WEAPONS COMPLEX WAS ORGANIZED, IT MADE LOGICAL SENSE TO LOCATE HIGH EXPLOSIVE WORK WITH ASSEMBLY AND DISASSEMBLY. IT STILL MAKES SENSE. FURTHERMORE, THE D.O.E.'S OWN ANALYSIS INDICATES THAT THE COST OF TRANSFERRING H.E. WORK TO NEW MEXICO LABS WOULD BE FIFTY MILLION DOLLARS. IT IS INCONCEIVABLE. THAT THE D.O.E. MIGHT SEEK TO JUSTIFY SPENDING FIFTY MILLION DOLLARS ONLY TO END UP WITH LESS PRODUCTION CAPABILITY IN A LOCATION THAT HAS NEVER PERFORMED THIS MISSION.

IN TERMS OF STORAGE AND DISPOSITION ACTIVITIES, I WOULD FIRST LIKE TO NOTE MY PREVIOUS COMMENTS ABOUT THE NEED TO PROTECT THE ENVIRONMENT. I AM ENCOURAGED BY THE PREVIOUS COMMENTS ABOUT THE NEED TO PROTECT THE ENVIRONMENT. I AM ENCOURAGED BY THE OUTSTANDING ENVIRONMENTAL RECORD THAT PANTEX HAS REGARDING STORAGE OF PLUTONIUM OVER MANY YEARS. I HOPE THAT THE D.O.E. WILL MAKE THE RIGHT CHOICE AND CONTINUE THE SAFE STORAGE OF SURPLUS PLUTONIUM AT PANTEX. I ALSO HOPE THAT THE D.O.E. WILL KEEP IN MIND THAT PLUTONIUM FROM DISMANTLED WEAPONS REPRESENTS A TREMENDOUS INVESTMENT AND MAY PROVE TO BE A VALUABLE ASSET IN CIVILIAN

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**PUBLIC MEETING ORAL COMMENTS, AMARILLO, TX
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USE. I URGE THE D.O.E. TO CHOOSE PANTEX AS THE SITE FOR ENVIRONMENTALLY SOUND DISPOSITION ACTIVITIES.

ONCE AGAIN, THANK YOU FOR THE OPPORTUNITY TO COMMENT ON THE D.O.E.'S PLAN FOR THE FUTURE OF PANTEX. PANTEX HAS BEEN AN IMPORTANT PART OF OUR REGIONAL ECONOMY FOR MANY YEARS, AND WE SUPPORT THE CONTINUATION OF ENVIRONMENTALLY SOUND OPERATIONS AT THE PLANT. I WOULD ALSO LIKE TO THANK ALL THE CONCERNED CITIZENS OF OUR COMMUNITY WHO HAVE MADE THE EFFORT TO ATTEND THIS MEETING TONIGHT.

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Mr. Vance Reed
President, Amarillo Economic Development Corporation

Comments on the Stockpile Stewardship & Management PEIS,
the Storage & Disposition of Fissile Materials PEIS, and
the Pantex Site-Wide EIS

Thank you for this opportunity to provide input to the Department of Energy regarding the operation of the Pantex plant. I would like to address two primary issues tonight regarding Pantex's future: 1) the environment, and 2) jobs.

Starting with the environment, I would like to reiterate this community's adamant position that all work performed at Pantex continue to be done in a fashion that protects the environment. While the public has heard a great deal about "contamination" at Pantex, there has been little media attention given to the nature of pollution problems at Pantex. Most contaminants at Pantex are related to solvents and hydrocarbons that are very similar to those that would be found at practically any large manufacturing facility. This community is very reassured by the fact that Pantex has not had contamination problems from radioactive materials, such as occurred at Rocky Flats and Hanford.

The Amarillo Economic Development Corporation views Pantex in much the same manner as we view other large manufacturers in terms of presenting risks to the environment. For instance, if we were recruiting a computer chip manufacturer, we would realize that these plants have hazardous waste streams including arsenic and other heavy metals. The A.E.D.C. would only recruit a company that is committed to full compliance with E.P.A. and state environmental regulations. High tech businesses have created whole new industries and thousands of jobs, while working with very hazardous substances. This shows that protection of the environment and job creation can go hand-in-hand.

Likewise, we believe that Pantex can be a site where good, high-paying jobs are created in a work environment that includes potentially dangerous materials. When

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measured in terms of total payroll, Pantex is by far the area's largest employer. With 3,500 employees at the plant, a job multiplier of 3.87 shows that Pantex is responsible for a total of over 13,500 jobs in this region. This multiplier was established by Dr. Ray Perryman at Southern Methodist University. The multiplier reflects the fact that the money that Pantex brings into the local economy supports many retail, medical, educational, finance, insurance and real estate jobs. All told, employment related to Pantex represents over 12% of all jobs in the Amarillo metropolitan area. I urge the D.O.E. to correct the socio-economic impact portions of all three EIS documents to accurately reflect the impact of Pantex on our local economy.

Because of the importance of Pantex to our local economy, the A.E.D.C. is very pleased that Pantex has been chosen as the preferred site for continued assembly and disassembly functions. We also believe this decision is in the best economic interests of the nation, as it saves more than 1.5 Billion dollars to American taxpayers. I also urge the D.O.E. to continue the high explosive fabrication mission that is currently performed at Pantex. Again, this not only protects jobs in our region, it saves American taxpayers 50 Million dollars compared with the cost of moving these operations to New Mexico.

For Pantex's future, the D.O.E. should locate storage and disposition missions at Pantex, as long as they can be done in an environmentally safe fashion. I urge the Department to make use of the expertise of the Amarillo National Resource Center for Plutonium. This resource center, which is operated by the University of Texas System, the Texas A&M University System, and the Texas Tech University System, can provide world-class evaluation of disposition options. I believe the Amarillo area will prove to be an outstanding operating environment for those storage and disposition functions that have been fully scientifically evaluated and safely implemented.

Once again, thank you for the opportunity to address you in this workshop tonight.

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Amelito Martinez
Attorney, April 23, 1986

1. So slow on response
2. With our present President we don't know from one day to the next what he is going to do.
France is testing
China is testing etc.
It is foolish to be thinking of reducing the stock pile as it seems to be proposed.
3. The environment damage that you may see will offset that area. No consideration is given to all the chemicals that is poisoning the human body by allowing the chemical companies to put all these chemicals into our food supply which will harm all humanity in the U.S.
4. which is worse "the pollutants" put out by parties that offset the local population. or
5. all the chemicals that go into our food which offsets the whole nation
6. It will hurt the economy of this city to have another "pay roll" eliminated. The state if plans under plans to dispose of, and there are - the are here. ~~with the state~~

AM-001

Not a flexion and not a flexion.

I am not in favor of
cutting the payroll
of this city further.

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**PUBLIC MEETING ORAL COMMENTS, NORTH AUGUSTA, SC
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Augusta Public Meeting Oral Comments - April 30, 1996

Public Meeting Comments

Savannah River Site
April 30, 1996

Morning Meeting
Plenary Session

C: Please clarify the time frame of the documents release.

C: The cost should not drive the decision but it should be considered. Timing could have a stronger driving force and it has not been mentioned. You (DOE) did not mention future generations and the conservation of nonrenewable resources. Other countries will have nuclear technologies available and the United States will be behind technologically. I am looking for a complete environmental analysis that includes cost, timing, impacts to future generations, and conservation of nonrenewable resources.

C: My initial fears about the Savannah River Site have been reassured, allowing me to ignore all of the negative statements I have heard in the past which did not have a basis in fact. I am now reassured that the site is safe and environmentally sound. Savannah River Site is logical for the storage and disposition options. The Savannah River Site community is involved and wants to keep the public and environment safe. The site is the largest employer in the area and with the downsizing effort there have been some negative impacts from an economic standpoint. I urge DOE to use the Savannah River Site and its intellect and physical infrastructure. We welcome you.

C: I would like to address two issues: 1) I am fearful that without having a continued needed mission at the Savannah River Site, DOE will lose this nuclear weapons expertise and experience; 2) Savannah River Site has a good future use plan, the other sites may not. I would hope that the other sites have a wildlife preservation plan for their undeveloped areas. DOE should make it a policy to not build on green field sites, but build new facilities by using brown field sites, a complex wide program. DOE needs to disregard the deep borehole option.

C: The Savannah River Site has touched everyone's life directly or indirectly. Through my work as Director of Planning for the Lower Savannah Council, I feel the Savannah River Site programs, manpower, and experience are an integral part of this community. Informing the public has been good and it is very important to know what is going on with the Savannah River Site and

1/01.00.00

2/08.03.01

3/15.00.00

4/08.03.01

2/08.03.01

cont.

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Note: Some documents submitted during the public meeting were recorded as part of the minutes. The same documents, in some instances, were also submitted as hand-ins at the end of the meeting. In those cases, the documents are analyzed once, either as part of the minutes or as stand alone documents. Listed below is the name of the individual who submitted a document as part of the minutes and the page number containing DOE's responses to the comments:

American Nuclear Society, James Dewes

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01 00 00 Comment Number 1

Cost and timing (schedules) were not addressed in the PEIS since it focuses primarily on environmental analyses. However, cost and schedules were considered in a separate Technical Summary Report issued in July 1996. These factors will be considered, along with environmental impacts of the candidate alternatives, as part of the ROD. Conservation of nonrenewable resources for Reactor Alternatives is considered in this PEIS.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's support for SRS. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

15 00 00 Comment Number 3

Comment noted.

08 03 01 Comment Number 4

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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its potential. We (citizens) would like to see the Savannah River Site utilized. We (citizens) feel the Savannah River Site has the ability and experience to do perform these options, the economies are not only in the best interest for the community but for the United States.	2/08.03.01 cont.
C: If the plutonium was turned into a powder or dust form, low income areas and minorities would be disproportionately impacted if dispersed.	5/09.12.08
C: It is important to bring the public into this process. What is the weakness within public outreach that a more diverse group is not here at this meeting to learn and raise their concerns. A more diverse group would assist DOE in decisionmaking and they would be involved in the process.	6/08.02.00
Q: Why can't DOE reopen and process the fuel rods and radioactive material at the Barnwell Plant?	7/15.00.00
C: I understand that DOE has five reactors containing spent fuel that have been sitting for five years, why doesn't DOE use them. Why is DOE letting them sit there?	8/01.04.00
C: Participant showed a slide on the future use of Savannah River Site. (slide attached)	
C: The Barnwell Plant closed fifteen years ago. It was shut down by President Carter, he shut the plant down without conducting the National Environmental Policy Act process. It is not encouraging that other countries have done processes that the United States did not encourage and they have performed them successfully, for example, reprocessing. So why does the United States think we can influence them now?	9/01.03.00
Q: Referencing the calculation of potential risks in the summary, Savannah citizens are in the range of the site for getting cancer. Did DOE look at the Savannah River Site only for the release of radiation or did DOE look at all of the industries in the area combined with the Savannah River Site that could cause effect?	10/09.00.06
A: I believe it covers the cumulative impacts from the Savannah River Site only. DOE will review that again to make it clearer.	
C: That is not fair to the citizens of Savannah. There should be a combination of the Savannah River Site and industry impacts. It could show that we may live longer if the Savannah River Site was closed.	11/09.00.06
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09 12 08 Comment Number 5

A review of the geographical distribution of minority and low-income populations and meteorological data indicates that if an accidental release of radiation were to occur, these particular populations would not be disproportionately affected. The prevailing wind conditions at SRS, for example, would not lead to dispersion of the Pu to cause these populations to receive higher doses than other populations.

08 02 00 Comment Number 6

The Department of Energy announces, in advance, public meetings on NEPA documents with the intent of involving all interested parties. These meetings are advertised in a number of ways in order to encourage full public participation. Eight public meetings were held concerning this PEIS to present information contained in the Draft PEIS and to receive public comment. All comments submitted received equal consideration.

15 00 00 Comment Number 7

This would require appropriately designed facilities including extensive chemical processing. While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort.

01 04 00 Comment Number 8

Existing DOE reactors were operated for the purpose of R&D. Most of these reactors are of smaller scale and would not have sufficient infrastructure to support the Pu disposition mission.

01 03 00 Comment Number 9

The goal of the materials disposition program is to utilize processes that place Pu in a form that meets the Spent Fuel Standard, a condition where the Pu is as inaccessible and difficult to retrieve and reuse in nuclear weapons as the Pu

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C: Under Stockpile Stewardship and Management it seems that more pits will be made and under Storage and Disposition. DOE is trying to figure out what to do with the pits. This doesn't make sense for one document to make more plutonium and then the other does not know what to do. Q: The possible use of two options being an "either/or" situation has not been addressed. How long would it take to vitrify 50 tons? How long would it take to process 50 tons in a reactor? How long would it take if both options were used for the 50 tons?	12/01.00.00 13/05.01.08 14/06.00.08 15/01.04.00
Morning Meeting Breakout Sessions	
C: DOE needs to realize that with the public meetings and breakout sessions there will always be a room of people that are not well-versed on the topic. DOE needs to address this situation. C: If DOE could commit now to using the European capability the space would be available. With a commitment, the capacity for the lead test assembly or test demonstration program and the first core loading will be available. However, it has to be committed early, instead of waiting and the capacity being full. Q: What is the greatest negative of using mixed oxide fuel? (Note: This comment initiated a discussion about proliferation when converting plutonium to mixed oxide fuel but there was never a definitive statement of risk.) Q: Why is the commercial industry in the United States considered to be a proliferation risk? Why can't the commercial industry be trusted to reprocess when DOE trusts Mario Fion? (Note: The response provided at the meeting did not appear to fully respond to the issue.) C: In an International Atomic Energy Agency report that looked at large scale processing plants and mixed oxide production, it said there is no proliferation risk. For Europe, the International Atomic Energy Agency is concerned about nonproliferation. C: With that answer, I would think the reactor option would be discounted because of the waste generated.	16/08.02.00 17/15.00.00 18/06.01.06 19/01.06.00 20/01.06.00 21/08.03.01
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that is present in spent fuel from nuclear reactors. While the PEIS discusses the generation of spent fuel as a result of potential disposition actions, any subsequent reprocessing and extraction of Pu from the spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort. The fact that the PEIS evaluates disposition of surplus weapons Pu through use in MOX fuel, but does not further evaluate reprocessing of the spent fuel, does not preclude future changes in the U.S. Nonproliferation Policy.

09 00 06 Comment Number 10

In accordance with NEPA regulation 40 CFR 1508.7, *Cumulative Impacts* are defined as impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. With respect to radiological impacts from normal operations, the contribution from the Vogtle Nuclear Plant (located across the Savannah River from SRS), considered a present action under this definition, is included in the cumulative impacts presented in Section 4.7.2.6.9. There are no other facilities in the area of SRS that release radioactivity to the environment.

09 00 06 Comment Number 11

No other Federal, State, local, or private reasonably foreseeable actions were found that would contribute to cumulative impacts for the time period being considered. When possible, planned projects before the year 2005 No Action baseline have been incorporated into the No Action Alternative. The No Action Alternative takes into account existing site operations and includes the impacts resulting from planned changes to operations until the year 2005. Projects planned for beyond the 2005 No Action baseline would be in such a preliminary stage as to make analysis speculative.

01 00 00 Comment Number 12

No new weapons are being produced, but the United States needs to maintain the core competency and capabilities to produce pits to support national defense in a dynamic world. Existing pits declared surplus need to undergo the disposition process to fulfill the goals of the President's Nonproliferation Policy and to provide visible evidence of irreversible disarmament.

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C: It is not in the draft Programmatic Environmental Impact Statement. (Note: This comment was made at the end of a discussion regarding how DOE accounted for waste generated by the mixed oxide fuel option as compared to the waste generated by uranium mining and burning of the fuel. DOE committed to do more with this in the final Programmatic Environmental Impact Statement.)	22/09.11.08	
C: Salt drifts would be released to the aquatic environment and the wetlands with the reactors mentioned earlier that use cooling towers. There are several endangered animals along the Savannah River which would be impacted, this should be analyzed. The salt is corroding the beaches in Savannah.	23/09.06.06	
C: The deep borehole option would place the plutonium in itself. The barrier is the length of the hole. Then there is the mixed oxide fuel reactor, which could create energy giving it an economic value. Both options create nuclear waste, however, mixed oxide fuel may create more waste. The United States has the potential to reprocess the fuel now. The immobilization and deep borehole options will require very sophisticated technology and equipment to retrieve the plutonium. Wouldn't it be easier to reprocess the plutonium in case it is needed later, since it is harder to retrieve material from immobilization or from the deep borehole.	9/01.03.00 cont.	
C: If you look at the amount of plutonium being discussed today and the amount of plutonium generated in commercial reactors over fifteen to seventeen years, it is about two percent of the total available.	24/15.00.00	
C: If the United States does not use mixed oxide fuel it will lose technology and expertise. The United States was a technology leader now will become a beggar.	25/08.03.01	
C: My comment and question regard excess (surplus) plutonium. People don't understand the difference between the commercial spent fuel issue and the nonexcess material. This confusion should be cleared up. How will DOE get the material to the spent fuel standard and not change the isotopic content?	26/01.04.00 27/01.00.00	
C: I have heard today that on one hand DOE does this and on the other hand DOE does that. It seems that some things have been taken out of context when DOE is suppose to have put this altogether and considered everything. The United States just keeps chasing its tail. There are some people who cannot grasp the information and get the correct perspective. One statement says DOE is doing this to get rid of plutonium then DOE is generating plutonium. It bothers me that statements contradict each other.	28/01.00.00	
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05 01 08	Comment Number 13	Current plans call for vitrifying 4 or 5 t (4.4 or 5.5 tons) of Pu per year, resulting in a 10- to 12-yr campaign for the full 50 t (55 tons).
06 00 08	Comment Number 14	The details vary with selections of reactor designs and specific core designs. Typically, a very large LWR is capable of consuming MOX fuel at a rate of 1 t (1.1 tons) of Pu per year. If 5 reactors were used, then the irradiation campaign would be about 10 years, not including an approximate 10-yr period required to make the fuel available to the reactors.
01 04 00	Comment Number 15	The length of time depends on the throughput of each facility and how many facilities are being used, which in turn is determined by the urgency of the mission and the amount of available congressional funding. Analyses of the cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD. The cost, schedule, and technical analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996.
08 02 00	Comment Number 16	Comment noted.
15 00 00	Comment Number 17	Comment noted.
06 01 06	Comment Number 18	The use of MOX fuel is analyzed for the Reactor Alternatives in the PEIS to provide an understanding of their potential environmental impacts, and how these impacts differ from those of the other alternatives. No attempt is made to rank the alternatives since all of the impacts are within acceptable environmental, safety, and health limits.

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C: DOE is fueling itself, if it (DOE) thinks that it can influence another country to do what the United States wants DOE needs to look at what can be done and how to move forward instead of linking it with an unpredictable party. I am trying to justify what our time is being spent on	29/01.00.00	
C: The agreement on disposition seems to be an element of uncertainty. The United States should use the technology it has now to deal with our problems and not wait for the Russians. Things are taken out of context, one idea is jumped on then it is dropped, the public ends up getting the wrong impression. I am sure some of the public today is searching for information	30/01.06.00	
C: Future generations are not mentioned in the draft Programmatic Environmental Impact Statement. What happens when the United States runs out of fossil fuels? The National Environmental Policy Act states that the impact of making energy resources inaccessible or inextricable should be considered. What is the impact for the year 3000 is not the impact for the year 2010. Will DOE look at the alternatives, for example operational reactors, partially constructed reactors, and new reactors? These would supplement the energy of fossil fuels and reduce carbon dioxide emissions. The cost and cost benefits need to include the cost of research and development of other plants, when will it be made available.	31/01.04.00	
C: What are the barriers DOE perceives for closer coordination with the United States program, to include light water reactors, perhaps even to burn the Russian plutonium in addition to the United States plutonium and what is being done to bring the barriers down?	32/01.06.00	
C: There is momentum for the Canadian option because of pricing. I don't think that the United States pricing has been explored enough, it needs a harder look	33/01.03.00	
C: Russia won't give us their material for free and the Canadians will be getting the energy value, I don't want my taxpayer money that has been used and will be used to be spent for that way.	34/08.03.01	
C: DOE should contact Phyllis Laser of Texas for information on the problems with deep boreholes in Texas.		
C: The amount of waste generated from mixed oxide use seems to be a lifetime figure not an annual figure, could DOE get a specific answer and sent it to us?	35/09.11.08	
C: I would suggest that in the final document this should be reworded so that the whole conclusion rather than just the bad part is stated. (Note: This comment refers to comments in the summary relating to environmental justice impacts.)	36/09.12.08	
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01 06 00 Comment Number 19

The Department of Energy does not consider commercial industry a proliferation risk, as evidenced in the Existing LWR Alternative which uses commercial reactors to carry out the Pu disposition mission. While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort.

01 06 00 Comment Number 20

Comment noted.

08 03 01 Comment Number 21

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning must be considered. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 11 08 Comment Number 22

The Avoided Impacts section of the PEIS (Section 4.9) has been updated not only to include avoided human health impacts from mining, milling, and enrichment operations, but avoided air quality impacts, avoided waste generation, and other avoided environmental impacts. This section includes the displacement of uranium fuel by MOX fuel.

09 06 06 Comment Number 23

A detailed analysis of potential impacts from salt drift was not presented in this PEIS because design parameters have not been developed for the alternative. Section 4.3.5.4.6 of the PEIS states that potential impacts due to salt drift may be evaluated in additional environmental documentation, if required.

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C: In the tables of background radiation (Volume I, Chapter 3 - tables for each site), the public should be given the range of background radiation for a 50 mile area. The ability to compare the person tens from background radiation to the person tens at the Savannah River Site, would show how minuscule the increase is. Not having a comparison of the numbers does not show a true reflection. This information needs to be put in context.	37/09.09.06
C: If there was not the mixed oxide fuel option, the following is what you would expect from a uranium fuel cycle: 340 cubic meters of high level waste glass, 5 million additional cubic meters of mill tailings, and 3,400 cubic meters of enrichment tails. This would be the waste generated if the mixed oxide option was not chosen.	38/09.11.08
C: Regarding the movement of the pits from Pantex to the Savannah River Site which could be surplus and strategic. It is unwise to store them together in same facility and an unwise decision to approach.	39/08.03.01
C: DOE does not want the strategic pits to be found.	40/15.00.00
C: There are a significant amounts of oxides.	41/09.12.06
Q Can DOE clarify the minorities statement, is DOE saying that minorities will not be affected? (Note: The response provided at the meeting did not appear to fully respond to the issue.)	42/08.02.00
C: Because the minorities are affected, more public relations is needed for the minorities. Minorities should have some voice in this decisionmaking process.	43/04.03.00
C: The same was thought for Carlsbad 20 years ago. (Note: This comment came from a discussion on the deep borehole and its viability and site selection probability.)	
Morning Meeting Summary Session	
C: Two things: 1) There needs to be outreach activities beyond the present outreach activities to reach the minorities and low income areas and involve them in this process. Outreach through brochures, television, and radio is not enough. Particularly downstream and rural communities. Most minorities could not take professional leave today without penalty. DOE needs to think of ways to bring in the communities affected. A strategic effort is needed to train these individuals, a base of understanding needs to be established; 2) The analyses need to take	44/08.02.00
	45/08.02.00
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15 00 00 Comment Number 24

Comment noted.

08 03 01 Comment Number 25

The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

01 04 00 Comment Number 26

Comment noted. The PEIS indicates that only the storage of all weapons-usable fissile materials (both surplus and nonsurplus) and the disposition of materials declared surplus to national defense needs are addressed in the document. The document also indicates that the Pu in commercial spent fuel is not addressed.

01 00 00 Comment Number 27

The purpose of the Spent Fuel Standard is to convert Pu to a form that makes it as unattractive and inaccessible as the residual Pu in commercial spent fuel. Once the Pu is converted, it is very difficult to retrieve and separate out. Any Pu separated would become weapons-usable, regardless of its isotopic content.

01 00 00 Comment Number 28

Comment noted.

01 00 00 Comment Number 29

The Department of Energy is proposing to take action on storage and disposition of weapons-usable fissile materials in the United States. Once the decision is made late this year, there will be a path forward for the storage and disposition of these materials. DOE also hopes that other nations will follow our example and seek our technical assistance.

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into consideration the low income areas affected with the combination of the Savannah River Site and area industry impacts. We (Citizens for Environmental Justice) don't want to come to more meetings without the involvement of black community. Local officials need to become more involved, especially in Georgia. It is a disservice for DOE to ask the public to wade through the size of these documents. The average citizen has a third grade intellect. We (Citizens for Environmental Justice) want facts from independent sources, not just DOE.	45/08.02.00 cont.
C: People of color need to become more informed. We (DOE and minorities) should be working together. DOE needs more input from the minority population.	46/08.02.00
C: The employees of the Savannah River Site have not been represented, they received an e-mail about this meeting yesterday. It would be nice for DOE to bring in these employees, maybe have a meeting at the site, they need to be included.	47/08.02.00
C: The material from the Savannah River Site should be moved to either Oak Ridge or Pantex. Low income or people of color are largely impacted in this area.	48/08.03.01
C: We (minorities) don't want to fall into the syndrome of not in my back yard. The information needs to be thoroughly analyzed to make sure that the risk to all humans is minimized.	49/09.12.06
Evening Meeting Plenary Session	
Q: More precise information is needed for the deep borehole option. How will the different radioactive wastes be placed in these deep boreholes? Phyllis Laser has reported about the deep borehole process (not in relation to the Materials Disposition program) and the problems that have been encountered in Texas with them. Are there more public meetings on these subjects or is this the last? (Note: The response provided at the meeting did not appear to fully respond to the issue.)	50/04.00.00
C: The Aiken Chamber of Commerce would like to state on behalf of the Chamber of Commerce in the areas surrounding the Savannah River Site we are united for future missions. I am representing 30,000 employees from 1,000 employers in seven counties with four Chambers of Commerce from two states with one message. We want future missions for the Savannah River Site.	2/08.03.01 cont.
C: The Building and Trades Union, second the Chamber of Commerce comments and look forward to working with the Savannah River Site in the future.	SM-001

01 06 00 Comment Number 30

The Department of Energy is proposing to take action on storage and disposition of weapons-usable fissile materials in the United States. Once the decision is made late this year, there will be a path forward for storage and disposition of these materials. DOE also hopes that other nations will follow our example and seek our technical assistance. It is important for the United States to work with Russia on disposition options to help them focus their efforts, make technology decisions, and begin implementation of disposition activities. The United States is not likely to proceed with Pu disposition unless Russia takes reciprocal action.

01 04 00 Comment Number 31

This PEIS analyzes the environmental impacts of various reasonable alternatives now and in the foreseeable future, following NEPA guidance. Impacts in the year 3000 involve a great deal of uncertainties and would be unrealistic to predict at this time.

01 06 00 Comment Number 32

The use of domestic LWRs for disposition of U.S. Pu has been analyzed in the PEIS. Disposition of Russian Pu in U.S. reactors was not considered as an option. Disposition of both Russian and U.S. Pu in CANDU reactors was considered since it was proposed by Canada as a non-weapons state.

01 03 00 Comment Number 33

Comment noted.

08 03 01 Comment Number 34

The Department of Energy acknowledges the commentor's opposition to the use of the CANDU Reactor Alternative for the disposition of Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input. This will include an appropriate level of analysis by Canada before any decision on burning Pu in a CANDU reactor is implemented.

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C: [Prepared statement submitted (see attached)].	
Evening Meeting Breakout Sessions	
C: This program could benefit by accelerating the site disposition decision along with the storage decision. DOE should not follow in the foot steps of the Foreign Research Reactor Spent Nuclear Fuel Environmental Impact Statement decisionmaking process.	51/08.03.00
C: From the long-term perspective, disposition seems to take the material from an "as is" condition to a spent fuel form. The full life cycle costs don't seem to be laid out in the document. The disposition of the material after it is used and future mortgage do not seem to be addressed in your (DOE) decisionmaking process.	52/06.01.06
C: I accept this as an open issue. The unknowns here should be translated into economic or environmental impacts that get added to the analysis when they are compared to other alternatives that do not have the same amount of unknowns. (Note: This comment was made following a discussion on whether or not waste from mixed oxide fuel could be certified.)	53/08.00.00
C: [Prepared statement of American Nuclear Society, Central Savannah River Section (see attached)].	54/09.11.06
Evening Meeting Summary Session	
No summary session	

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09 11 08 Comment Number 35

Impacts reported in Sections 4.2 and 4.3 of the PEIS are annual values for each of the storage and disposition alternatives. Impacts reported in Sections 2.5, 4.6, and the Summary of the PEIS are for the life of each alternative.

09 12 08 Comment Number 36

The environmental justice analysis, Section 4.5 of the PEIS, summarizes the potential environmental justice impacts for all the sites so that the decisionmaker has all information available. The Summary contains a condensed description of the impacts of the available information. Based on comments received, the Summary of the PEIS was revised.

09 09 06 Comment Number 37

To better understand the natural background environmental radiation levels and the Proposed Action's incremental radiation levels, the natural background environmental radiation levels at each potential site involved in the Pu storage and disposition alternatives are presented in Chapter 3 of the PEIS. For the same purpose, the incremental radiation levels from Proposed Actions are compared to the natural background environmental radiation levels in the same area in Chapter 4 of the PEIS. In all cases, the natural background environmental radiation levels are the major source of exposure to the general population.

09 11 08 Comment Number 38

The Avoided Impacts section of the PEIS (Section 4.9) has been updated not only to include avoided human health impacts from mining, milling, and enrichment operations, but avoided air quality impacts, avoided waste generation, and other avoided environmental impacts. This section includes the displacement of uranium fuel by MOX fuel.

08 03 01 Comment Number 39

Comment noted.

15 00 00 Comment Number 40

Comment noted.

09 12 06 Comment Number 41

The environmental justice analysis does not assess whether minorities would be affected, but whether minorities and low-income populations would be disproportionately affected. This is accomplished by combining detailed demographics data for the areas surrounding the candidate sites with the results from the public health and socioeconomic analysis. The public health and socioeconomic analyses assess whether all of the surrounding populations would be affected by the Proposed Alternatives. These sections do not distinguish among sub-population groups.

08 02 00 Comment Number 42

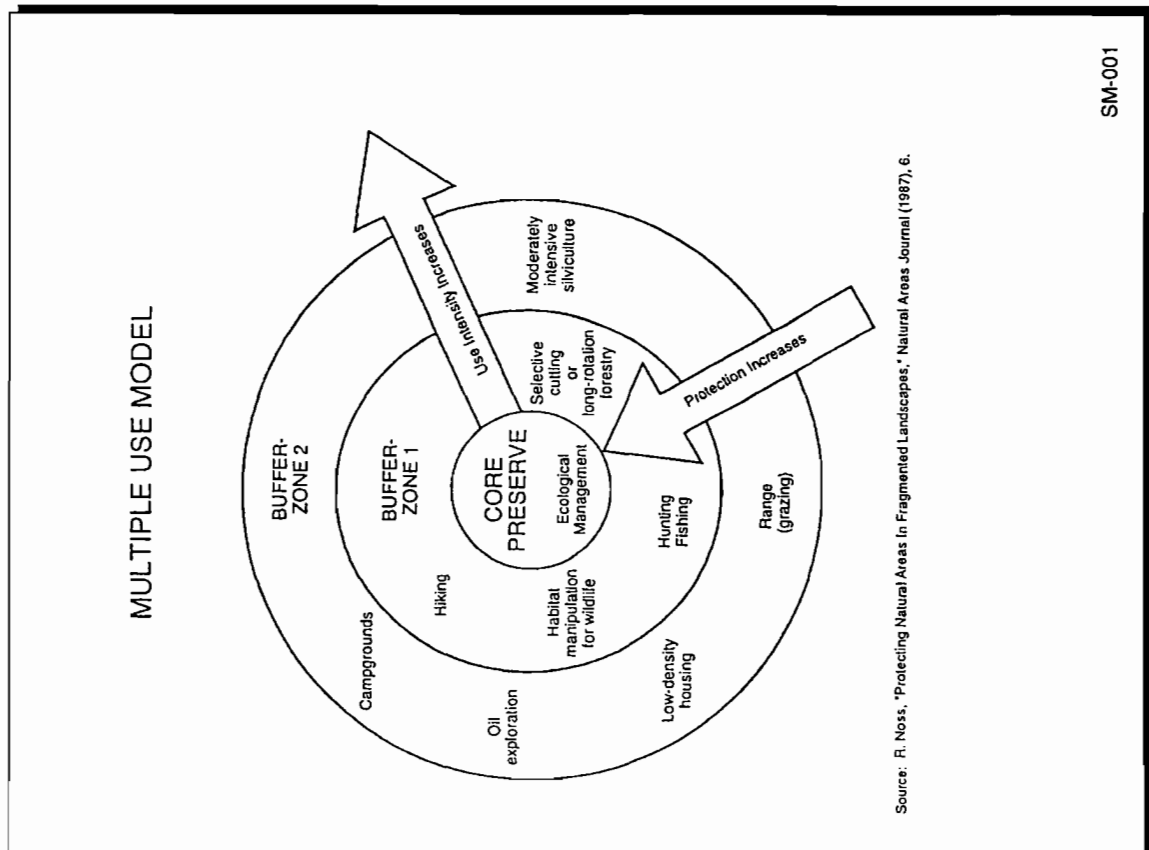
All members of the public have a voice in the decisions to be made on this very important area. All comments receive equal weight and are given equal consideration. All comments are given to the decisionmakers so that good sustainable decisions are made.

04 03 00 Comment Number 43

Comment noted.

08 02 00 Comment Number 44

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.



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AMERICAN NUCLEAR SOCIETY - SAVANNAH RIVER SECTION STATEMENT
REGARDING STORAGE AND DISPOSITION OF WEAPONS-USEABLE FISSILE
MATERIALS DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

My name is John Dewes and I am Vice Chairman of the Savannah River Section of the American Nuclear Society. Our local section consists of some 800 scientists and engineers in the Central Savannah River Area. On behalf of the Section, I would like to make a statement concerning the Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement.

We believe that all of the long term storage options are acceptable from the standpoint of environmental, safety and health. We also believe that any of the Long Term Storage sites proposed have sufficient infrastructure to handle the engineering & design of such a facility.

We strongly support the recommendations contained in the American Nuclear Society Special Panel Report on the Protection and Management of Plutonium¹, a Panel chaired by Glen T. Seaborg, who discovered Plutonium almost 60 years ago. This report recommended implementation of the reactor irradiation option for disposal of surplus weapons-usable plutonium.

The stated goal of the PEIS is to make surplus plutonium inaccessible and unattractive for use as nuclear weapons. We believe that the reactor irradiation option has several advantages over the other options in meeting this goal. It is the only option that converts weapons grade plutonium to reactor grade plutonium. This is a crucial point, because our weapons testing history indicates that, although possible, it is extremely difficult to build a successful nuclear weapon from reactor grade plutonium, and that the infrastructure required to either build a successful weapon or to purify the plutonium to weapons grade presents a tremendous barrier to diversion. The reactor irradiation option is also the quickest way to reach the goal of the Spent Fuel Standard for protection from misuse.

Jill Lytle, Deputy Assistant Secretary, in her prepared comments for the Citizens Advisory Board Plutonium Forum, indicated that she wanted a "sustainable decision", one which considers the issue in light of other decisions under review and one that garners long term public support. The decision should therefore reflect the long term need to protect the public from diversion of the materials in question. The French have recognized this issue, and are currently taking advantage of the long term protection associated with the use of mixed oxide fuel for their civilian stockpiles of plutonium.

We believe that if the mission of the DOE is to ensure a stable energy supply for our country's needs, then the energy value of the plutonium, estimated at 32 billion dollars, should be considered when selecting the preferred alternative. Plutonium is not a waste - it is the closest thing to a peace dividend our country will ever see. We also believe that the DOE needs to pay attention to scientific facts related to plutonium rather than irresponsible and irrational statements made concerning its toxicity and potential impact on the population.

We strongly urge you to select the reactor irradiation option as the most beneficial and effective method for dispositioning of weapons-usable fissile material. Thank you for the opportunity to provide comment on this important issue.

¹ Protection and Management of Plutonium, American Nuclear Society Special Panel Report, Glen T. Seaborg, August 1995.

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08 02 00 Comment Number 45

The analyses in the PEIS take into consideration low income areas that could potentially be affected by decisions on storage and disposition of weapons-usable fissile materials.

Local officials in South Carolina and Georgia have been provided copies of the Draft PEIS, or it has been made available for their use.

08 02 00 Comment Number 46

Comment noted.

08 02 00 Comment Number 47

The Department of Energy uses a wide variety of methods to communicate with the public on these important issues. These methods include public meetings, as part of the NEPA process, and meetings outside of the process, such as the Plutonium Round Table. Numerous fact sheets and displays are made available at the meetings as well as by mail. All of this information is available on the Program's electronic bulletin board.

08 03 01 Comment Number 48

The Department of Energy acknowledges the commentator's opposition to new missions at SRS. Decisions on the storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 12 06 Comment Number 49

One objective of the PEIS is to identify potential impacts from each of the Proposed Alternatives so that human health risks are taken into account in the decisionmaking process. DOE is committed to implementing a program that minimizes risks to all workers and all affected populations.

04 00 00

Comment Number 50

More detailed information on the borehole technology is available in the Technical Summary Report and related borehole alternative summary reports made available to the public beginning in July 1996.

08 03 00

Comment Number 51

The Department of Energy is working to make decisions on these very important issues in a timely manner using all available information such that wise, sustainable decisions can be implemented in a deliberate, properly scheduled manner.

06 01 06

Comment Number 52

Technical, schedule, cost, and nonproliferation analyses along with the environmental analysis will be used by the decisionmaker in determining the ROD. The technical, schedule, and cost analyses were made available for public review beginning in July 1996. The nonproliferation analysis was made available to the public beginning in October 1996.

08 00 00

Comment Number 53

In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analysis were made available in the fall of 1996. Each of these analyses, along with the environmental analysis and public input, will be integrated into DOE's decisionmaking process.

09 11 06

Comment Number 54

Appendix H of this PEIS evaluated the various Pu waste forms for potential disposal in a HLW repository to include MOX spent nuclear fuel. The environmental impacts associated with the operation of the HLW repository are not within the scope of this PEIS. The environmental impacts of constructing and operating a HLW repository would be completed in a separate NEPA analysis. This PEIS analyzes the construction and operation of a MOX fuel fabrication facility and the associated reactors in Section 4.3.5.

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Rocky Flats Public Meeting Oral Comments - March 26, 1996		
Public Meeting Comments		
Rocky Flats Environmental Technology Center Tuesday, March 26, 1996		
Afternoon Meeting Plenary Session		
C: I am in favor of moving this material off Rocky Flats.	1/08.03.01	
Afternoon Meeting Breakout (Combined) Session		
C: The population parameters should be kept visible in the matrix, because it is the great deterrent for not using Rocky Flats.	2/01.05.00	
C: I don't see security listed as a parameter, if we have to have 371(not identified as a building or area) and a new vault then security will have to be increased, therefore, increasing costs. I don't see maintenance and operation listed. These subjects should be considered in relation to the matrix.	3/13.00.00	
C: [Prepared statement of Kenneth Werth (see attached)]		
C: In reviewing the summary I noticed that whenever transportation was dealt with it was written in the summary as, "and intersite transportation would be susceptible to cumulative impacts." I recognize that there will be transportation of these materials. I think that the public will be concerned with the security measures associated with the transport of this material. The processes used to transport the material should be displayed and explained better to the public. A better statement of the security should be addressed in the final Environmental Impact Statement to further allay the public's fears. I recommend that a general statement saying, "Security measures are in place" be added, at least, in the final document, even if most of the security measures are classified.	4/13.00.00	
Q: Is there a policy forthcoming on the movement of the material by interstate highways and roads? (Note: DOE staff present at the meeting acknowledged that they did not have an answer to this question and asked the participant to fill out an unanswered question card.)	5/01.00.00	
C: I don't think it's a good idea to give too much latitude to the standards or policies on how to deal with this material or to allow too many decisionmakers. If the United States has the capability, it should be used.	6/01.06.00	
C: Senator Nunn will speak on nuclear safety tomorrow on C-SPAN. I propose for Colorado to use interim storage of the weapons-usable material but not at Rocky Flats. A new vault for storage is not a problem but the vault should be placed on a military base for security reasons, do not place the vault at Rocky Flats. Northeast Colorado has minuteman silos for storage, why couldn't DOE use these silos for material storage?	7/08.03.01	
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Note: Some documents were submitted during the public meetings and were recorded as part of the minutes. The same documents, in some instances, were also submitted as hand-ins at the end of the meeting. In those cases, these documents are analyzed once, either as part of the minutes or as stand alone documents.

Listed below is the name of the individual who submitted a document as part of the minutes and the page number containing DOE's responses to the comments:

Kenneth Werth 3-1119

08 03 01 Comment Number 1

All storage alternatives in the PEIS analyze the removal of all weapons-usable fissile materials from RFETS for long-term storage or disposition.

01 05 00 Comment Number 2

The site selection process including criteria for evaluating candidate storage sites is described in Chapter 2 of the PEIS.

13 00 00 Comment Number 3

The security aspects of the storage and disposition alternatives will be developed further in detailed designs for the selected alternative(s).

13 00 00 Comment Number 4

In response to comments, DOE has expanded the transportation analysis (Section 4.4 and Appendix G) to include a more detailed description of issues involved in transportation of the weapons-usable fissile materials. This revision is included in the Final PEIS.

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Rocky Flats Public Meeting Oral Comments - March 26, 1996

C: Thanks to DOE Site and Headquarters personnel for coming out. I am sorry for the small turn out to today's meeting. The people in this area have become satisfied.

**Afternoon Meeting
Summary Session**

No summary session

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01 00 00 Comment Number 5

Transportation of weapons-usable fissile materials will comply fully with applicable DOT regulations. Should new Federal regulations or policies be promulgated, DOE will comply.

01 06 00 Comment Number 6

Comment noted.

08 03 01 Comment Number 7

The Department of Energy acknowledges the commentator's opposition to storage of weapons-usable fissile materials at RFETS. All storage alternatives in the PEIS analyze the removal of all weapons-usable fissile materials from RFETS. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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Rocky Flats Public Meeting Oral Comments - March 26, 1996	
Evening Meeting Plenary Session	
C: I would like to see more balance between the federal agencies and the private sector with the issue of handling hazardous waste. The more stringent requirements demanded of the private sector should be demanded of the federal agencies. During a visit to Rocky Flats it seemed the monitoring is slowing down, the plastic covering the buildings is decaying because of weather and other elements, this makes one wonder about the steps taken for monitoring. I would like to see the monitoring efforts for Rocky Flats increase and not decrease. Thank you for the opportunity to speak I think that DOE and Rocky Flats is moving forward but more work is needed. C: I think that all nuclear countries should work toward disposition of nuclear weapons, not just the Russians. The Chinese are threatening to destroy Hawaii and California, then there is the speculation about a recent Chinese nuclear test. DOE may be moving forward but they are going too fast. The President giving away plutonium to the United Nations was not a good idea. He should be placed in jail. At present, higher importance has been placed on other trivial political issues, for example: Whitewater and Clinton's alleged affairs. The United States should place the issue of plutonium before all of them. President Clinton took the responsibility for giving the plutonium to the United Nations. C: There are two objectives that need to be talked about tonight. One is the disposition of surplus weapons. Weapons using plutonium is a major problem. The second is the draft Programmatic Environmental Impact Statement as it is related to long term-storage. I am disappointed that the presentation by Dr. Center did not go into the technologies that are available. There are many issues about costs, security, and safety, however, DOE needs to include health officials in monitoring and making sure there are no problems. C: I would like to see more attention given to storage issues. The disposition of surplus weapons should be reviewed for a longer period of time, since it seems that there are still a number of questions about the technologies. Too much attention is being given to foreign policy. We need a stronger emphasis on making certain the material is stored safely and securely now, and that it can be inspected by health officials as well as safeguard agencies. Q: How does the spent fuel standard relate to the technical alternative(s) for immobilization? The value is limited to the retrieval of the material. Is the value of placing the plutonium in a nonproliferable form greater than having to retrieve the material out of spent fuel and spending more money? (Note: The response provided at the meeting did not appear to fully address the issue. C: The interim storage vault decision for Rocky Flats is a wise decision.	8/15.00.00 9/01.03.00 10/01.04.00 11/02.00.08 12/04.02.00 13/07.01.00 14/08.03.01
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15 00 00 Comment Number 8

Comment noted.

01 03 00 Comment Number 9

The Department of Energy believes that the process for making decisions, including national policy considerations, will provide the basis for implementing Pu disposition actions that will encourage other nations to dispose of their Pu. The technical disposition process may not be the same for all nations.

01 04 00 Comment Number 10

One of the screening criteria DOE used for selection of reasonable alternatives to be analyzed in the PEIS is environment, safety, and health. In implementing the selected alternative, DOE will meet the high standard of public and worker health and safety, and all applicable environmental laws and regulations.

02 00 08 Comment Number 11

The PEIS provides the environmental analysis for the storage alternatives and sites in sufficient detail to provide the decisionmaker with the information to choose the storage alternative(s) and site(s). This analysis will provide the basis for long-term storage capability for the period required to reach decisions and implement actions required to achieve final disposition. Disposition alternatives are also analyzed to provide the decisionmaker with the information to choose a technology(ies). Further technology demonstrations and designs may be required before site selection and implementation of a disposition alternative.

04 02 00 Comment Number 12

Immobilization technologies meet the Spent Fuel Standard which makes Pu as inaccessible for weapons use as the residual Pu contained in commercial reactor spent fuel.

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Rocky Flats Public Meeting Oral Comments - March 26, 1996	
C: DOE does not have viable disposition alternatives in the draft Programmatic Environmental Impact Statement - DOE needs to focus on safety and security. Immobilization of the material is not a wise decision. The long-term storage options, glass or ceramics, should be poisoned with material other than highly hazardous materials. DOE needs to initiate a national dialogue to decide what will happen with the surplus plutonium.	15/01.02.00 16/08.03.01 17/05.00.08
Evening Meeting Breakout (Combined) Session	
C: On April 30, 1996, a second meeting (near the Rocky Flats Site) will be held for comments on this document. Rocky Flats is currently missing a ton of plutonium, for which the public has not received an adequate answer as to where it went. The public has been told that DOE can explain how the plutonium became (was found to be) missing.	18/15.00.00
C: I live here and I also work for the U.S. Geological Survey. Some of our guys monitor the soils and water at Rocky Flats. I'm concerned with radiation and whether there is any safe way to dispose of this material. I don't think the No Action alternative has negligible adverse impacts. Our land, air, and water resources would be impacted. The No Action alternative seems to imply that it is safer not to touch the material. To me, the No Action alternative reflects that, if you don't do anything, you won't impact the economy, but if the material stays here it will still have a big effect on the environment and the people.	19/02.01.07
C: The No Action alternative is required by the National Environmental Policy Act; however, several ecological impacts would exist. Choosing the No Action alternative at Rocky Flats seems more viable then getting cows off public land.	20/08.03.01
C: DOE needs to consider values that are not just about economics, such as the value of a nuclear weapons-free world.	21/08.03.00
C: I like the deep borehole alternative because it puts the material totally out of the way of harming people.	22/08.03.01
C: I would not be in favor of the deep borehole alternative, the United States should get some use out of this material. I am in favor of No Action alternative. The United States needs to make sure that the world is stable before disposing of this material.	23/08.03.01 24/08.03.01
C: The deep borehole alternative would have been safe many years ago. For example, three million years ago there was a natural nuclear African reactor where daughter products did not travel far.	22/08.03.01 cont.
Q: Would heat be an issue with the deep borehole alternative, causing a dangerous situation? (Note: The response provided at the meeting did not appear to fully respond to the issue.)	25/04.00.00
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07 01 00 **Comment Number 13**

Cost data, along with technical and schedule data, were provided in Technical Summary Reports for disposition beginning in late July 1996. Recovery of Pu from the "much larger and growing quantity of Pu that exists in spent nuclear fuel" is outside the scope of the PEIS.

08 03 01 **Comment Number 14**

The Department of Energy acknowledges the commentor's support for interim storage of weapons-usable fissile materials at RFETS. However, decisions on interim storage are not within the scope of this PEIS. The scope of the PEIS is long-term storage.

01 02 00 **Comment Number 15**

One of the screening criteria for selection of reasonable alternatives is the feasibility/viability of the disposition technology. The reasonable alternatives analyzed in the PEIS are considered technically viable. DOE will demonstrate the chosen disposition technologies prior to their implementation.

08 03 01 **Comment Number 16**

The Department of Energy acknowledges the commentor's opposition to the Immobilization Alternatives. Decisions on disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 00 08 **Comment Number 17**

Comment noted.

15 00 00 **Comment Number 18**

Accountability of materials at RFETS is beyond the scope of the PEIS. This subject is addressed in RFETS site-specific documents.

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Rocky Flats Public Meeting Oral Comments - March 26, 1996	
C: You can institute storage that deters proliferation or theft by a subnational group. I don't think any of the options shown here tonight would stop use by the host nation, including deep borehole.	26/13.00.00
C: I think we should reject the disposition options we have right now and continue our research in that area while making our long-term storage as proliferation-resistant as possible.	27/01.00.00
C: The deep borehole alternative seems very "out there", and I hope it is not a likely alternative. DOE should try to get the energy out of the material. Deep borehole seems like it was thrown in there just to have another option.	23/08.03.01 cont.
C: Political instability is a crazy reason to move so quickly. One administration should not make this decision, and it should not be made in a year, this decision is too important to rush. The United States moving quickly will not rush the Russians to dispose of their material.	28/08.03.00
C: I would like to see a level of respect for the material, the materials seem to be larger than the storage facilities. I would like to see more emphasis on monetary issues for future generations. I am concerned that the United States will not be able to keep track of the material within the next 50 years. The United States created it and everyone needs to take responsibility for it. This is an enormous responsibility. The public should inform Congress of this real problem that needs to be dealt with.	
C: The United States can't expect that our example will be followed. The United States needs to work with all nations together, to make plutonium and highly enriched uranium harder to use. Mixed oxide fuel use could spur a plutonium economy, this might be a problem. DOE should use Rocky Flats as a research location for a suitable immobilization technique.	29/01.03.00 30/08.03.01 31/08.03.01
C: It is important to develop technologies and to share these technologies with other countries, in order to be a leader. Once the United States takes the lead, the United States will have greater benefits for our society and the world.	32/01.03.00
C: DOE cannot characterize their waste. This is a problem.	
C: I would like to thank DOE for a very clear presentation.	33/09.11.08
Evening Meeting Summary Session	
No summary session	
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02 01 07 Comment Number 19

The *National Environmental Policy Act* requires the analysis to include the No Action Alternative as a baseline to compare the potential environmental impacts. The No Action Alternative may not accomplish the purpose and need, as identified by the PEIS, which is the case for storage and disposition. However, should the No Action Alternative be chosen, ongoing actions such as material stabilization and security, health and safety improvements would continue under the current management direction to ensure that the environment and the people are protected.

08 03 01 Comment Number 20

Comment noted.

08 03 00 Comment Number 21

Comment noted.

08 03 01 Comment Number 22

The Department of Energy acknowledges the commentor's support for the Borehole Alternatives. Decision on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 23

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 24

The Department of Energy acknowledges the commentor's support for the continued storage of surplus Pu (No Action Alternative). Decisions on

disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

04 00 00 Comment Number 25

No. As discussed on page 1–5 of the Deep Borehole PEIS Data Input Report (Direct Disposal), “heat generation by the Pu is not great enough to disturb the stagnant fluid regime at depth.”

13 00 00 Comment Number 26

Comment noted. The purpose of assessing the various reasonable alternatives in the PEIS is to find ways to execute the Proposed Action to meet the objectives in the President’s Nonproliferation Policy.

01 00 00 Comment Number 27

The Department of Energy acknowledges the commentor’s support for the continued storage of surplus Pu. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 00 Comment Number 28

The Department of Energy is not in a rush to make decisions in these very important areas of national security and proliferation concerns. DOE is following a schedule that allows the careful consideration of all relevant information, such as this PEIS, technical and economic studies, and commentors’ input. Then, good sustainable decisions can be made.

01 03 00 Comment Number 29

The intent of DOE’s Proposed Action is not only to take the lead in Pu disposition, but also use the environmental, technical, cost, schedule, and policy analyses results obtained during the decisionmaking process to enhance the flexibility of the U.S. negotiations with Russia and other nations, so that cooperative efforts in Pu disposition can be reached through bilateral or multilateral agreements.

08 03 01

Comment Number 30

The Department of Energy acknowledges the commentor's opposition to the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01

Comment Number 31

The Department of Energy acknowledges the commentor's support for research of a suitable immobilization technique for weapons-usable fissile materials at RFETS. However, decisions on interim storage are not within the scope of this PEIS. The scope of the PEIS is long-term storage.

01 03 00

Comment Number 32

Comment noted. The United States and Russia currently have a joint technical working group that is assessing disposition technologies. The purpose is to evaluate and exchange information on technology already developed in each country to help the decision process and expedite implementation. A Report of the Joint Working Group issued in September 1996 considers reactor, immobilization, and borehole technologies, as well as economics and safeguards. Plans also call for conducting small-scale technical demonstrations to various disposition alternatives.

09 11 08

Comment Number 33

The conceptual designs for the consolidated and collocated facilities and the disposition facilities have, as part of their design, waste management facilities that would treat and package all waste generated into forms that enable long-term storage and/or disposal in accordance with RCRA and other applicable Federal and State regulations and DOE Orders. As the designs mature, Process Waste Assessments, which include individual waste stream characterization, will be completed. No waste stream will be generated that cannot be treated and packaged into a form that enables long-term storage and/or disposal.

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Idaho Falls Public Meeting Oral Comments - April 15, 1996	
Public Meeting Comments	
Idaho National Engineering Laboratory April 15, 1996	
Afternoon Meeting Plenary Session	
C: I am pretty familiar with the Governor's Agreement and it does not refer to all the plutonium in Idaho as waste.	1/01.00.00
C: In reference to the eradication of the plutonium. I understand that material from the first splitting of the atom is still in its original state. I hear proposals but no solutions. Like the Waste Isolation Pilot Plant where billions are being spent, and it is still not ready.	2/12.00.00
C: [Prepared statement of John Commander (see attached)]	
C: I have discovered how to change matter through electron donors. An implosion machine emits protons, but not gamma or x-rays. I do not have the ability to check the emission of alpha or beta rays. I will submit the photographs taken which show this through the blue balls on the picture. The implosion machine can dissolve materials with no residue. I am an expert in Plasma Particle Physics. I can create new DNA in persons enabling them to become younger. When you add electron particles materials will change. I will also submit my carbon formula which violates the second law of thermodynamics. I have constructed a cyclotron which will get rid of plutonium-239 and waste. Through this process the plutonium and waste would be placed in another time phase. If cells in the human body can be restructured, then why can't it work on metals and restructure solid matter? With my procedures hair would begin to grow back. It has worked for me. As individuals we are programmed to believe what we believe until proven differently. I have documentation for everything I have told you today.	3/14.00.00
Afternoon Meeting Discussion Session	
C: At present there is ongoing construction for two additional lanes going into the Idaho National Engineering Laboratory. These additional lanes will relieve the transportation burden placed on lanes now. (Note: This comment follows a discussion in the PEIS analyses of impacts of level of service of local roads.)	4/09.08.03

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Note: A number of documents submitted during the public meetings were recorded as part of the minutes. The same documents, in some instances, were also submitted as hand-ins at the end of the meeting. In those cases, the documents are analyzed once, either as part of the minutes or as stand alone documents.

Listed below are the names of the organizations/individuals who submitted documents as part of the minutes and the page numbers containing DOE's responses to the comments:

American Nuclear Society, John Commander 3-40
State of Idaho, Governor Philip E. Batt 3-909
Steve Herring 3-363

01 00 00 Comment Number 1

The *National Environmental Policy Act* requires that DOE consider a range of reasonable alternatives for the storage and disposition of weapons-usable fissile materials. INEL and five other DOE sites are evaluated in the PEIS as potential storage sites. In addition to site evaluations, the document considers a range of storage approaches such as retention or off-site shipment of current inventories.

The final decisions on materials storage will be based on programmatic cost and policy considerations, as well as environmental analyses. Consistent with efforts to foster the cooperative spirit that we want to see continue to emerge from our agreement with the State of Idaho, DOE will not make any decision regarding the storage of weapons-usable fissile materials at INEL without first discussing the matter with the State of Idaho.

12 00 00 Comment Number 2

Comment noted.

14 00 00 Comment Number 3

Comment noted.

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Idaho Falls Public Meeting Oral Comments - April 15, 1996	
C: Transport of material would have to be in compliance with Department of Transportation regulations and maximize the interstate system. All interstates in Idaho go across sovereign nations.	5/01.06.00
C: As defined in the Programmatic Environmental Impact Statement, nonproliferation is the peaceful, beneficial reuse of the materials whenever possible. I don't think the United States can get other countries to stick this material in a hole, because they will want to use it. The United States needs to lead by example through the way it deals with the material.	6/09.09.08
C: It would be helpful to weight this issue (<i>latent cancer rates</i>) to be a zero as far as the danger to the public. If the ranking changes the issue should be reevaluated.	7/09.09.08
C: There is a problem with the (<i>latent cancer</i>) rates and numbers in the document showing three decimal places, this appears to make the rates and numbers more precise than they are.	8/09.09.08
C: Personal cancers are difficult to accurately estimate. The risks from background radiation are often more dangerous than the true impact of proposed activities. The way they are presented in the document could be misleading.	
C: In a magazine story, Dr. Unman discusses radioactive doses, he cited that the public is used to living in a radioactive environment. He asks, have you gotten your dose today? However, studies of cancer cases through the United States, have looked at cancers caused by radiation. The results have seemed to be analogous with the corn belt and not near nuclear facilities.	
C: I thought that an environmental impact statement was to look at impacts of the options that will be used, not at worst case impacts of options that will never be used. This is a waste of time and money if it doesn't reflect reality.	9/08.00.00
(Note: The following two statements were made during a discussion about plutonium and spontaneous combustion between meeting participants.)	
C: There was a fire in a glove box at Rocky Flats which burnt a facility down.	
C: There were two fires at Rocky Flats that occurred about 10 years apart, but the facilities did not burn down.	
C: Greenpeace is telling half-truths when they say that plutonium is dangerous. Plutonium is the most hazardous when it is in weapons form, we're trying to get it out of weapons, and that's good. Bismuth is more dangerous than plutonium. The United States is talking about 900 tons of highly enriched uranium and 200 tons of plutonium, approximately 1000 tons total. My cost figures estimate the material at \$500 a gram, which would equal approximately that one-half	10/08.03.01
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09 09 03 Comment Number 4

The Department of Energy acknowledges the commentor's observation and has revised text in Section 4.2.3.8 of the Draft PEIS as necessary.

01 06 00 Comment Number 5

Comment noted.

09 09 08 Comment Number 6

Potential human health impacts from the Proposed Actions are calculated and documented in this PEIS as required by NEPA. To inform the public and the decisionmakers, all latent cancer risks associated with the Proposed Alternatives are presented in the PEIS even if the risks are very small. The ranking or decisionmaking analysis for the alternatives is based on various factors including the human health impacts. Since the human health impacts are very small for all alternatives, it will not affect the ranking or decisionmaking analysis.

09 09 08 Comment Number 7

In order to provide information to the public and decisionmakers, the human health risk and latent fatal cancers are presented in the Draft PEIS even though they are very small numbers. To aid the public understanding of the risk numbers, an explanation of how to interpret these risk numbers is also included in Section M.5. Due to the inherent uncertainties associated with risk assessment, the parameters related to human health risk assessment should be kept to two significant digits. Risk numbers that are more than two significant digits were modified in Chapter 4 of the Final PEIS. Presenting more significant digits does not affect the decisionmaking process, but artificially grouping ranges of numbers may disguise significant discriminators.

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Idaho Falls Public Meeting Oral Comments - April 15, 1996	
trillion dollars that have been spent on weapons. Placing this material in the ground is irresponsible considering the money that has been spent.	10/08.03.01 contl.
C: The total amount of plutonium we are discussing could be stored under the table. However, few people understand critical mass, why the material can't be stored together. The size of a hockey puck is enough (8 oz.) material to make a nuclear warhead. Botulism kills now, whereas plutonium will kill forever and ever. Plutonium can accelerate as does anything with a nuclear charge. DOE should explain critical mass, and how it is being dealt with.	11/09.09.08
C: 22.4 kilograms of material placed together can obtain critical mass. The only way to get rid of it is to burn it. Other countries will believe that the United States is stupid if the material is placed in a hole. This information needs to be taken to Secretary O'Leary.	10/08.03.01 contl. 12/08.03.01
C: DOE is talking about a generic hole, however, when DOE begins site characterization on this generic hole all hell will break loose, as what happened with the Waste Isolation Pilot Plant and Yucca Mountain. People provide answers with no solutions.	13/01.02.00
C: During the Cold War, the United States and Russia built up a weapons stockpile. The United States should deal with this in a responsible manner now so that our grandchildren don't have to deal with our stupidity.	14/01.06.00
C: The document summary provides too much information on environmental impacts. For example, the tables give too much detail. It doesn't answer questions relating to critical mass, amounts of plutonium, and the specific facilities that would be used. DOE needs to summarize all of the document not just the environmental impacts.	15/01.00.00
C: There is a political party who wants to get rid of DOE. I don't see how politics can be divorced from the decision process.	16/01.06.00
C: It was implied that the decision made would be political, not technical. Upper management of DOE needs to stand true to the oath they have taken and make decisions based on technical information. I would like to know which way you think the decision will be made.	11/09.09.08 contl.
C: The public needs to be educated on critical mass. Only a small amount of plutonium can be burned at once. Twelve years to get something on line is out of the question. The United States economy is shot. Isn't it true that United States economy is ruled by politics?	17/12.01.00
C: I don't know if I will be around in fourteen years to see if the decision is made to open Yucca Mountain. I don't think DOE will come up with any ideas in 40 to 50 years since nothing has been done since 1955.	
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09 09 08 Comment Number 8

To better understand the potential health impacts from background environmental radiation and the Proposed Actions, the natural background radiation levels occurring at each potential site being considered as a Pu storage and disposition alternative are presented in this PEIS. These site background radiation levels were compared to the natural background radiation in the same area.

08 00 00 Comment Number 9

The Department of Energy under NEPA is required to analyze the environmental impact of all reasonable alternatives. DOE used a formal screening process, plus input from a NAS Report, to develop the list of alternatives. This list was then discussed with the public during the scoping process. Modifications and changes were made as a result of public comment.

08 03 01 Comment Number 10

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

09 09 08 Comment Number 11

Critical mass is explained in the PEIS's *Glossary* in Chapter 7. The PEIS does present the potential environmental and health impacts for the Proposed Alternatives which includes analyzing criticality accidents.

08 03 01 Comment Number 12

The Department of Energy recognizes the commentor's concern with the Borehole Alternatives. Decisions on the disposition alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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C: The United States likes to rename things, so if DOE is eliminated, it will probably just be renamed or be given to the state level of government. The United States doesn't give solutions to problems.	18/01.00.00
C: Personally, I am concerned about human safety. Argonne National Laboratory-West has proven to have safe storage. It would be in the best interest of the state, nation, and economy to continue with this project.	19/08.03.01
Afternoon Meeting Summary Session	
No summary session	
Evening Meeting Plenary Session	
C: There is the need to have an alternative that will store the material. That would enable the United States to use the material again for weapons, if needed.	
C: [Prepared statement of Idaho Governor's Office, Bob Ferguson (see attached)]	
C: [Prepared statement of Dr. Steve Herring (see attached)]	
C: I agree with the intent of the disarmament agreement with Russians, which would see highly enriched uranium and plutonium unusable for weapons, as soon as possible. It is easy to decide what to do with the material in the short term, if DOE could decide on the final disposition chosen. Those individuals who worked with this valuable material hate to see it thrown away. We would prefer to see it used in reactors. I am sure that the disposition alternatives are technically safe; however, the deep borehole alternative seems expensive. I would not like to see underground disposal interfere with disposal of commercial spent nuclear fuel. Don't downgrade Uranium-233, it could be valuable in space reactors.	10/08.03.01 cont. 12/08.03.01 cont.
Evening Meeting Discussion Session	
Q: With regard to disposition or immobilization of the material-would that be done now or down the road? DOE should not preclude future use of the material. Plutonium has real value, the taxpayer has paid a lot of money for it and any value from the material should be given back to the taxpayer by energy or power. Deep borehole and immobilization is not an option. If DOE	20/07.01.00 10/08.03.01 cont. 21/08.03.01
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01 02 00 Comment Number 13

Comment noted.

01 06 00 Comment Number 14

Comment noted.

01 00 00 Comment Number 15

Based on public comments, the Summary was revised.

01 06 00 Comment Number 16

This PEIS addresses the environmental impacts of the reasonable alternatives for DOE's Proposed Action. Analyses of cost, schedule, technical, and Nonproliferation Policy impacts are described in separate documents to support DOE's ROD.

12 01 00 Comment Number 17

Comment noted.

01 00 00 Comment Number 18

Comment noted.

08 03 01 Comment Number 19

The Department of Energy acknowledges the commentor's support for additional missions at INEL. Decisions on storage and disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

PUBLIC MEETING ORAL COMMENTS, IDAHO FALLS, ID
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Idaho Falls Public Meeting Oral Comments - April 15, 1996 hybridizes the material the facility should be at the storage location. (Note: The response provided at the meeting did not appear to fully address the issue.)		22/08.03.01
C: Those processes should be done in an area with a significant buffer. Idaho National Engineering Laboratory has that buffer and the Snake River can be environmentally protected. The decision should be made based on technical information.		23/15.00.00
C: A small amount of the material should only be blended down to 20% for research reactors; it may be a help to University reactors to give them some of the 20% fuel for education purposes.		24/14.00.00
C: The same technology can be used to burn plutonium as to breed it, and because of this we seem to cater to certain interest groups that think we are going to create more plutonium.		25/01.03.00
Q: Did DOE consider giving the fuel to other contractors beside Canada? (Note: The response provided at the meeting did not appear to fully address the issue.)		
C: With regard to disposition or immobilization of the material would that be done now or down the road. DOE should not preclude future use of the material. Plutonium has real value, the taxpayer has paid a lot of money for it and any value from the material should be given back to the taxpayer by energy or power. Deep borehole and immobilization in not an option.		26/01.05.00
C: A lot of people don't have electricity. By DOE not using the Integral Fast Reactor. The United States is giving up our technology to other countries. The Integral Fast Reactor would destroy in plutonium. Nonproliferation is not achieved if the plutonium is not destroyed. True nonproliferation means destruction of the material.		
C: If the Integral Fast Reactor was chosen, the United States could use the fuel and have 10,000 years of world energy. If the environment would not be impacted, then why not take the material and reprocess? The amount of waste would be smaller. Our country could be taken over in 100 years. How our fuel is dealt with would be very important if this happened and the material was not placed in a nonproliferable form. There are 33 countries with light water reactors generating plutonium. Electroprocessing creates the same non-retrieval barrier for the material as glass, however the electroprocessed material would be harder to retrieve. DOE should use that process to make the material nonproliferable. Continuation of scientific research should be foremost, not political reasoning.		27/08.03.01 26/01.05.00 cont.
C: The current administration is opposed to nuclear power. I am concerned that final Programmatic Environmental Impact Statement will be released in September, with the Record of Decision released in November. DOE needs to address the issues brought up during these meetings now and have the final Programmatic Environmental Impact Statement sent out after the decision. With that schedule another administration will make the decision. President Clinton		28/08.03.00
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07 01 00 **Comment Number 20**

Generally, the goal is to complete disposition within 25 years of the ROD. The storage decision will be for long-term storage up to 50 years. Schedule data, along with technical and cost data, were provided in a Technical Summary Report for storage and disposition in late July 1996.

08 03 01 **Comment Number 21**

The Department of Energy acknowledges the commentor's opposition to the disposition alternatives. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 **Comment Number 22**

The Department of Energy acknowledges the commentor's support for additional missions at INEL. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

15 00 00 **Comment Number 23**

Comment noted.

14 00 00 **Comment Number 24**

During the screening of alternatives for inclusion in the PEIS, a Reactor-Burning concept was evaluated involving a variation of the Integral Fast Reactor concept. However, this concept, which would use a reactor fuel cycle design still under development, would be more costly and less timely than other mature reactor options. The development program was recently terminated by the Administration and Congressional action. Since Pu disposition can be accomplished using existing technologies, there is no justification for developing this advanced technology for Pu disposition.

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wants to limit nuclear power.	
C: I have visited the Argonne National Laboratory-West; its electroprocessor is working now. This technology could be spread throughout the country rapidly. Technical issues should come before political issues.	29/01.05.00
C: Third World Countries need power - maybe the United States could build a reactor to show it can be done and licensed. The United States would show the Third World Countries by leading. It is possible that the United States could export the reactor design and fuel, so they will stop using fossil fuel and damaging the environment.	30/01.03.00
C: Secretary O'Leary has said that the chance of Yucca Mountain opening is 50/50. The chance of the deep borehole option occurring now or in my child's future is zero. Also, the Waste Isolation Pilot Plant is not open, and with that most of the underground technologies have been exhausted. DOE keeps saying that some technologies require long schedules, but two out of the three proposed options are still not available. Completion of one of the options listed will probably take 40 to 50 years.	31/12.00.00
C: There is no time to finish the Integral Fast Reactor when it will produce 10,000 years of energy with plutonium. It may be two decades before the Integral Fast Reactor would be completed, during which the United States will be using up the fossil fuels available. There are a lot of pieces that need to be put together. With the plan of having electric cars in the future, the United States needs to be prepared. DOE might as well save the material or burn it. How does this tie in with the Integral Fast Reactor and its ability to make 10,000 years of energy? No one has been killed in 10,000 years by reactors, even in Russia only 200 persons have died. Which still makes reactors the safest energy source. DOE does not have America's interest at heart.	
C: The State of Idaho supports the Integral Fast Reactor and is not willing to let it die. The Governor's comments state that this disposition option is in place. DOE would miss out if they didn't address restoring the Integral Fast Reactor to facilitate disposition of the material. The Integral Fast Reactor is closer to burning the material than any other reactor.	32/01.04.00
Evening Meeting Summary Session	
No summary session	
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01 03 00

Comment Number 25

The Department of Energy also considered the possibility of fabricating and burning MOX fuel in European facilities. This option was eliminated since the capacities of European fabrication facilities and reactors are being balanced to minimize accumulation of civilian Pu from reprocessing. If U.S. weapons Pu were introduced into the European fuel cycle, it would upset this balance and increase the accumulation of civilian Pu. While utilizing European facilities is not a long-term solution, it may be able to support the U.S. disposition mission in the short-term. Until an equilibrium is achieved among European reprocessing, fuel fabrication, and reactor facilities, there may be some excess MOX fabrication capacity available that could be utilized for a limited period to fabricate MOX fuel from U.S. weapons Pu for use in U.S. reactors. In the event that the Reactor Alternative using MOX fuel is selected in the ROD, this excess capacity could help get disposition efforts in the United States underway pending startup of a domestic MOX fuel fabrication facility.

01 05 00

Comment Number 26

The Integral Fast Reactor technology would require a significant amount of time and money to implement, complete technology development and demonstration, and build necessary facilities. Destruction of all Pu would take hundreds of years because of the many cycles of reprocessing and reintroduction into liquid metal reactors. Use of existing reactors can place the Pu into a form that makes it as difficult to use in a weapon as the Pu in commercial reactor spent fuel.

08 03 01

Comment Number 27

The Department of Energy acknowledges the commentor's support for the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, existing agreements, and public input.

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IAMS Statement Re: Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement My name is John Commander. I am Vice-Chair of the Idaho Section of the American Nuclear Society and represent some 900 members located predominately in the Idaho Falls area. On behalf of the section, I would like to make a statement concerning the Storage and Disposition of Weapons Usable Fissile Materials Draft Programmatic Environmental Impact Statement. We believe that all of the long term storage options are acceptable from the standpoint of safety and environmental impact. However, we do believe that the Collocation of the Plutonium and the Integral Fast Reactor (IFR) is the most desirable alternative. We also believe that any of the Long Term Storage sites proposed could be designed to be acceptable. We believe that the Plutonium Disposition Alternatives which involve disposal with out utilization as fuel for use in reactors are unacceptable. We support the recommendations contained in the IAMS Special Report on the Protection and Management of Plutonium (Special Panel Report, dated November 1990). This report recommends the use of the reactor irradiation option for disposal of surplus weapons-usable plutonium. The Special Panel Report also recommended continuation of development work on reprocessing and breeder (Integral Fast Reactor) as a promising approach to proliferation-resistant fuel cycle. We strongly support this recommendation also. <i>Sincerely, John Commander</i> 170 Fieldstream Lane Idaho Falls, ID. 83404	33/08.03.01	10/08.03.01 cont.	34/14.00.00

08 03 00 **Comment Number 28**

Comment noted.

01 05 00 **Comment Number 29**

Comment noted.

01 03 00 **Comment Number 30**

Comment noted.

12 00 00 **Comment Number 31**

At this time, DOE is continuing efforts to characterize the Yucca Mountain site for receipt of HLW and efforts to open the WIPP site. If these efforts are unsuccessful, the United States will identify other sites and/or approaches for accommodating waste from materials disposition and other DOE activities. In the event that sites cannot be identified in time to receive waste, safe temporary storage arrangements will be made pending availability of a final waste acceptance site.

01 04 00 **Comment Number 32**

Comment noted.

08 03 01 **Comment Number 33**

The Department of Energy acknowledges the commentor's support for the Collocation Alternative. Decisions on storage alternatives will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

14 00 00 **Comment Number 34**

Comment noted.

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GOVERNOR

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Testimony regarding the
Draft
Fissile Materials Disposition
Programmatic Environmental Impact Statement

Monday, April 15, 1996
Idaho Falls, Idaho

As the Governor of the great state of Idaho, I appreciate the Department of Energy's efforts to come to grips with the by-products of the Cold War. To those of you who have traveled great distances to attend today's meeting, I extend to you my warm greetings.

This nation entered the nuclear age fifty years ago with big dreams, high hopes and in the case of nuclear weapons, horrible fears about what might some day be unleashed. At the same time we entered in the nuclear era, we were ill prepared for what to do with the final waste streams that come about through nuclear activity.

The DOE is addressing these issues now through multiple environmental impact statements. Not all of them affect Idaho, but because the decisions DOE will make on the Draft Fissile Materials Disposition Programmatic Environmental Impact Statement will impact our state, it is important that DOE listen to what Idahoans have to say. Many fear what your decisions will do to the environment. Others fear what it will do to their pocketbook. Whatever decisions are made, it is important that DOE listen.

Although the EIS process DOE has undertaken is difficult and fraught with a certain degree of inevitable controversy, this process is an opportunity to peacefully decide what to do with what are essentially surplus war materials. Rather than using them in war, we now have the opportunity to calmly and rationally decide what to do with these surplus Cold War materials.

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The products under consideration in the Draft Final Materials Disposition Programmatic Environmental Impact Statement include plutonium and highly enriched uranium. As a nation, we must do something with these materials to make them safer and protect ourselves from the potential for misuse.

Under the draft PEIS, DOE officials are currently considering several options regarding what to do with these by-products. The draft PEIS identifies three long-term storage alternatives for plutonium and highly enriched uranium: upgrade facilities at multiple sites; consolidate the nation's plutonium at a single site; and co-locate plutonium and highly enriched uranium. The six candidate storage sites are: the Idaho National Engineering Laboratory, Hanford Site, Nevada Test Site, Oak Ridge Reservation, Pantex Plant and the Savannah River Site.

Let me make it perfectly clear to the DOE, media and citizens of Idaho, bringing nuclear waste material to Idaho for long term storage is not acceptable by either the letter or the spirit of the historic agreement reached last year.

Under the terms and principles of our agreement, transuranic waste material is specifically prohibited from entering Idaho until a treatment facility for that material is constructed and operating. Once the transuranic material is brought to Idaho, it has six months to be in Idaho before treatment and it must leave within six months after treatment. Transuranic waste is that waste contaminated with plutonium and other radioactive elements.

The state of Idaho considers any plutonium material brought to Idaho to be transuranic waste and therefore covered under the agreement.

Plutonium is a transuranic material because it contains more than 100 nanocuries of alpha-emitting isotopes with half-lives greater than 20 years per gram of waste.¹ Surplus plutonium is a waste because it is DOE's stated purpose and intent to treat this material so that it can be made proliferation resistant pending its ultimate disposition in a geologic repository. This EIS proposes to treat the plutonium by vitrification or MOX fuel fabrication. If DOE proposes to construct and operate either of these treatment facilities in Idaho, then Idaho will hold DOE to its obligation under the agreement -- treatment within six months of receipt and shipment out of Idaho within six months of treatment.

Furthermore, if DOE decides to bring either plutonium or highly enriched uranium to Idaho for long term storage rather than treatment, Idaho will regard this as a direct violation of the spirit of our agreement. Both federal parties and Idaho agreed to act in good faith to effecuate and fully support this agreement. There was no doubt that the

¹ United States v. Philip E. Barr, Civil No. 91-4054-S-EL, Oct. 17, 1993, definition section sizes "transuranic waste as "defined as set forth in Spent Nuclear Fuel EIS, Volume 2, Appendix E.

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purpose of the agreement was to set the ground rules for how DOE would bring radioactive materials into Idaho and when these materials would leave.

Our agreement does allow DOE to request a modification of the agreement if a National Environmental Policy Act (NEPA) analysis results in the selection of an action that conflicts with the terms of the agreement. If Idaho doesn't agree with DOE, the court can decide whether DOE's proposal is reasonable. In this case, shipping large quantities of plutonium and highly enriched uranium for storage in Idaho makes little sense and is clearly unreasonable given DOE's other options.

Idaho has just 4.5% of the nation's plutonium and 10.1% of the nation's declassified highly enriched uranium. In contrast, Tennessee has 66.4% of the declassified highly enriched uranium and Texas has 66.4% of the nation's plutonium.¹ It would seem to make sense that if DOE wants to simply consolidate its holdings of these materials, there are places other than Idaho that are better suited for this purpose.

Idaho is no longer a nuclear dump site. Again, if DOE merely wants to bring plutonium and highly enriched uranium to Idaho for "long term storage" in violation of the agreement, that is unacceptable.

Idaho must be and will be ever vigilant. Under my administration, I assure every Idahoan that we will continue to hold INEL to the very highest standards. As part of that effort, the state of Idaho's Division of Environmental Quality recently issued 61 notices of violation at INEL.² Protecting Idaho's environment is an absolute must.

Having said that, let me add this. My administration still seeks new jobs and new missions for INEL. Just recently I came out in strong support of medical radioisotope production at Idaho's National Engineering Laboratory. I will continue, with others, including Idaho's Congressional Delegation, to seek new projects that provide quality jobs for eastern Idaho. I mention this because I believe that INEL scientists and engineers are some of the very best in the nation. I am confident that they can safely handle any material sent to them.

Radioactive material carries with it a lot of emotion. I believe the state's position addresses the fears of many. We want INEL to be clean. We want your operations to be safe. We want to see nuclear waste go to safe geologic repositories for permanent disposal. We also want good jobs at INEL, but simply bringing nuclear material to Idaho for indefinite "long term storage" does not achieve that objective and does not meet the spirit or letter of the agreement that was reached last year.

¹ Department of Energy National Governors' Association bandout, "Department of Energy Nuclear Materials and Waste Status and Pending Decisions, March 19, 1996." Relevant graphs attached.

² For more information, contact Dave Piskarski, Bureau Chief, Enforcement Bureau, Idaho Division of Environmental Quality, 208-373-0502.

Inventory Summary - Plutonium

(99.5 Metric Tons- MT)



Source: Secretary O'Leary announced on February 6, 1996 that the actual inventory of Pu is 99.3 MT.

Note: The Pantex (TX) and DOD Sites category includes plutonium not present at Pantex. Specific amounts and locations are available.

Notes: The Penter (TV) and (OO) film references in this chapter do not inventory of PA 1199.3 All

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Statement by
Dr. Steve Herring
298 Call Avenue
Idaho Falls, Idaho 83402
April 15, 1996

1. A critical requirement for any alternative is that it must assure that the weapons-usable material cannot be clandestinely fashioned into a weapon for centuries to come. The NAS study established the "agent fuel standard" as a criterion by which to judge disposition alternatives. According to the special fuel standard, the plutonium is in a form from which it is as difficult to recover as the plutonium contained in spent LWR fuel. One assured way of meeting the "agent fuel standard" is to incorporate the plutonium in LWR fuel and then to use that fuel in high burnup.
2. Our priorities must be to advocate a safe, technically sound and proliferation-resistant process first, a fiscally responsible alternative second and, only as a third priority, to advocate alternatives located at the INEL.
3. The environmental impacts of the various alternatives are difficult to sort out of the EIS Summary Document without applying much more time and study (probably of the main EIS documents). They are not likely to exceed significantly the impacts of existing/on-going activities.
4. Disposal of the Pu through ~~burnup~~ use in commercial power reactors provides a "Peace Dividend" for weapons-usable materials. Commercial reactors already produce considerable plutonium (concurrent with burning it up via the fission process). A number of commercial nuclear plants including WPPSS- have expressed an interest in using weapons Pu in their plant as a way to lower overall fuel costs.
5. The MOX fuel fabrication facility would likely be built where the Pu storage is consolidated. It is appropriate to support the INEL for this role.
6. According to the EIS, some forms of Pu may not lend themselves to MOX fabrication. For these forms, the INEL should play a major role, either through the ANL-W EM process or via one of the other immobilization alternatives. If the treated material is shipped out of Idaho in a timely manner, it would meet the terms of the 1995 Waste Agreement.

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Public Meeting Comments	
Nevada Test Site March 28 & 29, 1996	
Evening Meeting - March 28, 1996 Plenary Session	
C: The United States always says that the government will protect you, but what about the Western Shoshone Treaty? Is the government going to take the Shoshone land again and make the Shoshone come to DOE for our land. The deep borehole alternative will contaminate the soil and water table, no matter what DOE thinks. Why does DOE ignore the land owners of the Nevada Test Site and Yucca Mountain? Why are there no Shoshone at the meeting tonight? I have been saying for years that DOE ignores the Native people throughout the world. DOE only brings destructive material to our lands. The Shoshone want living things to continue growing, we (Shoshone) are tied to the land. I hope you (DOE) are listening.	1/09.07.02
Evening Meeting Storage and Disposition Breakout Session 1	
C: It is my understanding that the Canadians are studying the draft Programmatic Environmental Impact Statement but no decisions have been made on whether they will agree on the CANDU option.	2/01.03.00
C: Basic fundamental science is missing from this issue, specifically colloid chemistry. DOE doesn't understand this process. All isotopes can be destroyed in the deuterium reactors. It has been done, however this was not listed. Colloid chemistry stops any idea of transporting or storing the material. Any material DOE places in the ground, the public will eventually drink. Again, the basic science is missing.	3/06.05.08
C: That is not true. (Note: This comment was made by a participant in response to DOE's statement that "...Yucca Mountain is being considered for spent nuclear fuel, not for storage of surplus fissile materials.")	
C: The underground storage of material is prohibited in any area. Underground storage can not be done safely and securely.	4/02.00.08
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09 07 02 Comment Number 1

The Department of Energy understands that the Western Shoshone have disputed the U.S. Government's ownership of lands on NTS and Yucca Mountain. The land ownership issue has been brought to court several times.

The Department of Energy seeks input from Native Peoples through the NEPA process and has instituted, and follows, the DOE *American Indian Policy*, as well as regulations under *American Indian Religious Freedom Act*, *National Historic Preservation Act* of 1966, and *Native American Graves Protection and Repatriation Act* that require such input. For this PEIS, scoping meetings were held for the public to discuss and influence the course of the project prior to document preparation. Also prior to document preparation, an NOI was published in the *Federal Register*. Applicable Federally recognized tribes were sent the NOI, a notification of the scoping meetings, and the Draft PEIS. After the Draft PEIS was issued, public meetings were held, and applicable Federally recognized tribes received advance notice of these meetings and the open public comment period.

01 03 00 Comment Number 2

The Department of Energy has received formal support for the concept of MOX fuel use in the CANDU reactor from the Canadian Government. However, should this alternative be selected for implementation, formal agreement between the two governments will be reached.

06 05 08 Comment Number 3

There are no chemical processes, colloidal or otherwise, capable of destroying Pu. A range of Reactor Alternatives was considered by DOE, including ones capable of destroying large fractions of the Pu inventory (deep burn reactors). All Deep Burn Reactor concepts were too immature to be considered technically viable for this mission.

02 00 08 Comment Number 4

Comment noted.

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- C: I disagree with the statement that Yucca Mountain is not considered, when all of the storage alternatives except deep borehole need to use a repository. There are hazy lines between long-term storage and disposition.
- C: Until another repository option is made available, Yucca Mountain is the only repository where the material could be stored.
- C: DOE talks about burying the material in Yucca Mountain and hauling the material to the Nevada Test Site. I am concerned about transportation safety. How dangerous is the material on the roadways? The United States has already wiped out the Shoshone, how many lives is DOE going to take before a stop is put to this? What is the transportation mechanism that will be used for this material; rail, air, or highway? DOE employees are brainwashed.
- C: DOE is stating that waste is not a weapon, but it could be used as a weapon if put in the environment. In the future the material will be and must be eliminated and not placed in the ground. The technology was developed 50 years ago, the United States needs to address our citizens and our future, not Russia or other countries.
- C: The most dangerous material is slated for storage at Yucca Mountain. If there is not a way to securely immobilize the material, it should be placed in an area where the distance between the material and the population is large enough to not affect the population.
- C: DOE wants to solve the problem but it's the politicians that are deciding where the material should go.
- C: Initially, the radiation barrier was the factor for using the spent fuel standard. The spent fuel standard definition being used by DOE is not the same as the National Academy of Sciences wording.
- C: What the National Academy of Sciences was looking at as the primary barrier was radiation.
- C: The National Academy of Sciences is talking about coming the Russians into using the materials as waste.
- C: There was material destroyed at the Lawrence Livermore National Laboratory. I know of a way to destroy the material, and DOE has stated there isn't a way. With high power x-rays, deuterium atoms can be inserted into plutonium, then the plutonium becomes heat, gamma rays, etc. DOE is talking about a game with Russia, but destruction could get rid of all of this material. I can't believe that no one in DOE knows this process.

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01 00 00	Comment Number 5	Consideration of Yucca Mountain as a potential geologic repository site is a national policy prescribed by Congress in the NWPA Amendment. This PEIS analyzes the environmental impacts of surplus Pu storage and disposition alternatives, not the impacts of siting and operating a geologic repository. Whether or not Yucca Mountain is the site has little relevance to the comparison of alternatives when the same geologic repository is being used.
12 01 00	Comment Number 6	Comment noted.
10 00 00	Comment Number 7	The stringent Federal regulations require the use of packaging that cannot release dangerous quantities of radioactive material in any credible accident conditions; therefore, the health risks for transporting these materials by either truck or rail are low. The potential health risks from transporting materials associated with the proposed storage and disposition alternatives are evaluated and presented in Section 4.4 and Appendix G of the PEIS. However, there has never been an accidental release of radioactive material which has caused injury or death during more than 40 years of DOE shipment activity.
01 00 00	Comment Number 8	Comment noted.
12 00 00	Comment Number 9	Comment noted.

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C: DOE should look at the options versus the spent fuel standard. With mixed oxide fuel being the spent fuel standard, DOE seems to be modifying the definition. DOE should look at retrieval of material from deep borehole versus retrieval of material from spent fuel. With the acceptance of the spent fuel standard as the goal, it seems that DOE has imposed this standard on the public from one recommendation (National Academy of Sciences). The public should have more of a say. There should be a range of alternatives regarding the standard to be used. Q: What percent of fissile materials is waste? What percent of fissile materials is a weapons-usable resource? What percent of fissile materials will be disposed of? (Note: No response was provided at the meeting to these questions.) C: DOE needs to provide a direct and forthright response to the public. Stop using flowery phrases and be direct - say what you mean. C: DOE needs to analyze all hybrid combinations of the options (mix and match). These combinations should be analyzed in the document and cumulative impact data provided especially for the specific selection chosen. C: The public has not been afforded the opportunity to look at those mixes and matches. If DOE comes up with this in the final Programmatic Environmental Impact Statement, then there is not a lot of basis for commenting on the draft Programmatic Environmental Impact Statement, because DOE will be placing new options in the final Programmatic Environmental Impact Statement that were not available in the draft evaluation. C: Past persons working with plutonium in secrecy were protected, but this is not the case anymore. How is DOE going to avoid potential legal ramifications, particularly when it doesn't understand the basic science showing that the material cannot be safely or securely stored? When the shroud of secrecy protecting DOE actions is lifted, DOE may find that it is violating environmental laws like it has done in the past. Q: To what extent to date has DOE addressed a science-based rather than policy approach to storage and disposition, stockpile stewardship and management, downsizing, and nonproliferation? Who are the scientists working on this, what are their credentials, who decided which scientists it would be, and what if these scientists take the information from DOE and sell it or take it to Korea? DOE needs the best scientists now. The best should be done now, not later. It will matter to the victims. (Note: DOE staff present at the meeting acknowledged that they did not have a complete answer to these questions and asked the participant to fill out an unanswered question card.)	11/01.05.00 cont. 14/01.00.00 15/01.02.00 16/08.02.00 17/01.00.00 18/08.02.00 19/01.00.00 20/01.00.00 NM-001

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01 05 00 Comment Number 10

The Department of Energy, in considering the Spent Fuel Standard, did evaluate the adequacy of the Standard versus the greater degree of destruction achievable with other options such as the Deep Burn Reactor Option and the Accelerator Option. It was judged that the Spent Fuel Standard is adequate since it would convert the weapons Pu to a form that would make it as difficult to retrieve and reuse in a weapon as the Pu contained in the much larger existing volume of spent fuel from commercial nuclear reactors.

The Department of Energy concluded that the shorter disposition time achievable with more mature technologies was more desirable than the greater Pu destruction that could only be achieved over a much longer time period through the use of Deep Burn Reactors and Accelerators. The NAS also adopted the Spent Fuel Standard as the most acceptable form for conversion of weapons Pu.

01 05 00 Comment Number 11

Mixed oxide spent fuel will be essentially the same as all uranium in commercial reactor spent fuel; therefore, it will meet the Spent Fuel Standard. Vitrification Alternatives will be mixed with or embedded in high-level waste which will provide a radiation field equivalent to that of spent fuel. For the Borehole Alternative, although a radiation barrier will not be provided, the extreme difficulty in accessing the buried Pu is considered to provide a physical barrier equivalent to the radiological barrier of MOX and immobilization.

01 03 00 Comment Number 12

Comment noted.

14 00 00 Comment Number 13

The intent of the proposed Pu disposition action is not to pursue total Pu destruction. Rather, it is to convert the Pu into a proliferation-resistant form that meets the Spent Fuel Standard as recommended by the NAS. DOE, in

PUBLIC MEETING ORAL COMMENTS, LAS VEGAS, NV
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Las Vegas Public Meeting Oral Comments - March 28 & 29, 1996	
C: Did DOE take land away from the Shoshone? Or did DOE buy it? Or did DOE whip us? I am proud of that land, it provides food and other resources for me, but DOE does not care. The Shoshone are taking action about our land in court, the court has said that it will take a Congressional decision to allow the land to be used by DOE. Did DOE get Congressional permission? I hope DOE enjoys the land! Evening Meeting Storage and Disposition Breakout Session 2 C: I did not receive a document and I called the provided 1-800 number. Evening Meeting Summary Session C: This is not a Nevada or United States specific issue, it affects the future. We are the last generation that can address this responsibly. It may be expensive, but it is more expensive to blow away mankind and all organic life forms. The material can be vectored to the Sun, Moon, or Venus, and this can be done safely, but the material cannot be placed underground or stored. This is a science based mission. Where are the scientists and are they the best? DOE needs the best scientists to deal with this issue because the United States is out of time. The best scientists can get it right the first time, give them the money they need. DOE needs to recognize what we are dealing with, the problem is not nuclear but human nature. We are out of time!	21/09.01.02 22/08.02.00 23/01.00.00

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considering the Spent Fuel Standard, did evaluate the adequacy of the Standard versus the greater degree of destruction achievable with other options such as the Deep Burn Reactor and the Accelerator Option. It was judged that the Spent Fuel Standard is adequate since it would convert the weapons Pu to a form that would make it as difficult to retrieve and reuse in weapons as the Pu contained in the much larger existing volume of spent fuel from commercial nuclear reactors.

The Department of Energy concluded that the shorter disposition time achievable with more mature technologies was more desirable than the greater Pu destruction that could only be achieved over a much longer time period through the use of Deep Burn Reactors and Accelerators.

01 00 00 Comment Number 14

None of the weapons-usable Pu is considered waste. The exact percentages of Pu that go to vitrification or to reactor use would be determined as the result of the stabilization process for the Pu materials.

01 02 00 Comment Number 15

According to the Proposed Action, the end state of all the surplus Pu disposition alternatives is disposal.

08 02 00 Comment Number 16

Comment noted.

01 00 00 Comment Number 17

Since the PEIS analyzed the maximum impact of each Pu disposition alternative, and all the alternatives are well within acceptable environmental limits, it is predictable that any hybrid alternative would have much less impact than the combined maxima analyzed.

PUBLIC MEETING ORAL COMMENTS, LAS VEGAS, NV
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Las Vegas Public Meeting Oral Comments - March 28 & 29, 1996	
Morning Meeting - March 29, 1996 Plenary Session	
C: Then maybe you should not include that line in your briefing. DOE doesn't pay a lot of attention to the local public. (Note: This comment was made by a participant following an exchange regarding Yucca Mountain decisions and an overhead in DOE's presentation stating that a "more informed public means better decisions.")	24/08.02.00
C: The security at Nevada Test Site leaves a lot to be desired. The military has more ability (i.e., warhead disassembly) than just simple storage.	25/13.00.00
Morning Meeting Breakout Session	
C: Education and communication with the public is needed for risk perception. The public does not know or understand the numbers and their meanings in relation to risk perception.	26/08.02.00
C: DOE has mentioned several Programmatic Environmental Impact Statements that will generate nuclear waste. Storage and transportation of this material is a major concern. Clark County is not the place to transport the material through. I propose using a rail system that would bisect the state to reach the Nevada Test Site. A rail system, in turn, could bring more industry to Nevada and some equity for the residents.	27/10.00.00
C: I realize that we are not creating high-level waste, but we are disassembling nuclear devices at Nevada Test Site. I would like to see an alternative route for transportation, not through Clark County.	28/10.00.00
C: A railway would provide a dedicated right-of-way for transporting these materials, and they could establish a suitable buffer zone if problems did occur. The rail shipments could be scheduled to occur at times when the least amount of people would be at risk. This would take away the fear people have of shipping this on public highways. DOE needs to use the most viable alternative.	29/10.00.00
C: I understand the security concerns, but there are inequities toward the Tribes. (Note: This comment was made by a participant regarding DOE coordination with tribal communities following an exchange on transportation accidents and emergency response.)	30/10.01.00
C: DOE needs to have a translator for individuals to understand the documents. DOE should not provide documents that the average person cannot read and understand. An example	31/08.02.00
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08 02 00 Comment Number 18

The Department of Energy has not placed any new options (alternatives) in the Final PEIS. As stated in Chapter 2 of the Final PEIS, each of the disposition alternatives can be implemented in a number of ways as a variant of a specific alternative. A list of possible variants is included in Table 2.4-1. The alternatives analyzed are considered bounding for any of the variants suitable for the programmatic analyses included in the Final PEIS.

01 00 00 Comment Number 19

Analysis of the Nonproliferation Policy impacts of the various storage and disposition alternatives, including safeguards and security of the facilities, is presented in a separate document to support DOE's ROD. This document was available for public review in October 1996. DOE intends to comply with all laws even if various materials, documents, and data are classified.

01 00 00 Comment Number 20

Comment noted.

09 01 02 Comment Number 21

In the mid-1800s, lands that now comprise NTS were included within the boundary of a treaty between the United States and the Western Bands of the Shoshone Indians (that is, *Ruby Valley Treaty*). In 1951, the Shoshone tribe sought compensation for the loss of aboriginal title to these lands and was later awarded \$26 million in compensation. All of the land within NTS is owned by the Federal Government and is administered, managed, and controlled by DOE.

08 02 00 Comment Number 22

Comment noted.

**PUBLIC MEETING ORAL COMMENTS, LAS VEGAS, NV
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Las Vegas Public Meeting Oral Comments - March 28 & 29, 1996	
is the use of risk numbers. There needs to be greater emphasis on how they affect the public's concerns. Nevadans are interested in short-term effects, such as, property values, construction, etc. A region of influence of more than 50 miles needs to be developed. DOE is looking at costs, but what is DOE's decisionmaking process for the criteria to decide on transportation routes? The public should be able to see these. In the Record of Decision, DOE needs to make sure that Nevadans know what how it relates to the public, area counties, and the state. Negotiations should start for these issues either before or at least by the scoping meetings.	32/01.00.00
C: It took 5 years to receive funding to just expand the road in Pahrump. I am concerned about the impact that project costs and the availability of funding are going to have on the timetable for these programs.	33/08.03.00
C: What I am hearing today are some process problems. Public comments should have been incorporated before the draft document was issued. For example, the Environmental Impact Statement for the Nevada Test Site and Offsite Locations in the State of Nevada affected environment section identifies pollution levels that color the public's perception of alternatives being considered. Emphasis needs to shift to consider local needs and concerns first, not after the proposed action.	34/09.08.02
C: I applaud DOE in trying to address issues regarding nuclear material and waste. I would like to point out the fact that tourism in this area was not hurt during the years when we were donating hundreds of nuclear devices. Nevada is a large state with a vast amount of federal lands, skilled workforces, and ample resources to address this problem. The factor that needs to be addressed is transportation.	35/08.03.00
C: Maybe this meeting is not concerned about Yucca Mountain, but the people here are.	36/10.00.00
C: The Yucca Mountain Site characterization has not been completed and the Environmental Impact Statement for the Nevada Test Site and Offsite Locations in the State of Nevada Record of Decision is slated for July. This Record of Decision will be made before any of the Yucca Mountain decisions will be made. I don't feel that DOE is integrating the issues, especially when they will impact the Nevada Test Site.	37/12.01.00
Q: What is going on environmentally with these options and how many problems are there going to be? How much damage will there be? (Note: No response was provided at the meeting to these questions.)	38/11.01.02
C: The Nevada Test Site should be utilized - it has fantastic infrastructure and is relatively remote from populations.	39/09.00.02
	40/08.03.01
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01 00 00 Comment Number 23

Comment noted.

08 02 00 Comment Number 24

Comment noted.

13 00 00 Comment Number 25

Comment noted.

08 02 00 Comment Number 26

The Department of Energy acknowledges and understands the need for education and communication with the public on the subject of risk, accident probability, and related subjects. To help meet the goal of providing meaningful risk information, several pages of explanatory information on risk have been included in the Appendices to the PEIS (specifically see Appendix M).

10 00 00 Comment Number 27

Hazardous material transportation routes are predetermined by DOT in conjunction with the States. The risk from normal (nonaccident) transportation of radioactive materials by DOE is minimal. Even severe accidents are highly unlikely to cause injury or death from a radiological release because of the stringent Federal DOT/NRC packaging design and transport safety requirements. In over 40 years of shipment activity, neither DOE nor its predecessor has ever experienced an injury or death from a radiological release during transportation. If a Proposed Action is accepted (by the ROD), additional detailed analyses would be conducted to address specific problem areas identified in the PEIS, such as the need for a railroad to service a site.

Las Vegas Public Meeting Oral Comments - March 28 & 29, 1996

Morning Meeting
Summary Session

No summary session.

10 00 00 Comment Number 28

Federal laws govern the transport of hazardous materials in the United States to ensure the safety of the public and security of the cargo. The DOT is the principal Federal agency to implement the regulations, ensure compliance, and provide emergency response guidance. Radioactive materials under this PEIS would be transported through numerous states and local jurisdictions in full compliance with Federal laws (49 CFR) that are applicable to, and cannot be preempted by, individual states. The actual routes are classified. However, they are selected to circumvent populated areas, maximize the use of interstate highways, and avoid adverse weather. Exceptional precautions are taken to ensure safe transport.

10 00 00 Comment Number 29

The methodology for the safe transportation of nuclear materials (Pu and HEU) is well established. Acceptable risk is not dependent upon the transportation mode (truck versus rail) but rather upon the rigorous packaging design requiring Federal safety certification. The packaging must retain its contents under the most severe accident conditions (fire, impact, puncture, or water immersion). Rail transportation for Pu and HEU was abandoned in favor of the SST several years ago, and is not now considered a viable transportation alternative for these materials.

10 01 00 Comment Number 30

Pursuant to *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, DOE and other Federal agencies identify and address appropriate disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. This may also include necessary coordination and communication with tribal communities regarding potential transportation risks and emergency response.

08 02 00 Comment Number 31

The Department of Energy acknowledges and understands the need for education and communication with the public on the subject of risk, accident probability, and related subjects. To help meet the goal of providing meaningful information, several pages of explanatory information on risks have been included in the Appendices to the PEIS (specifically see Appendix M).

01 00 00 Comment Number 32

The PEIS performs the risk analysis to estimate health impacts to workers and the public. The risk analysis can only quantify tangible impacts, such as cancer fatalities, on exposed populations. Estimating potential impacts such as future property values and construction activities at sites greater than 80 km (50 mi) from NTS would be speculative and would not fulfill the intent of NEPA. The potential storage and disposition activities that are evaluated for NTS are of smaller scope than previous activities (underground nuclear testing) which apparently had no adverse affect on either the population growth rate or the property values in Clark County and the State of Nevada.

08 03 00 Comment Number 33

Transportation of special nuclear materials is by DOE's SST transportation system. This system involves coordination with State and local municipalities along the transportation routes to ensure proper response as required. The actual shipment times and routes vary and are classified for security reasons.

09 08 02 Comment Number 34

The funding used to implement the Fissile Materials Disposition Program is unrelated to funding used for road upgrades. The Fissile Materials Disposition Program would have no impact on the availability of funds nor the timetable for completing the Pahrump project.

08 03 00 Comment Number 35

Public comments on the scope of the Proposed Action have been included in the PEIS. Further, the relationship between other NEPA documents recently completed or in preparation (draft released) have been included in the PEIS.

10 00 00 Comment Number 36

The potential risk from radiological exposure during transportation is low because safety is built into the packaging used to transport radioactive materials. Type B packagings are tested to retain their contents under the most severe accident conditions. During the more than 40 years of DOE shipment activity, there has never been an accidental release of radioactive material that has caused injury or death. The maximum potential health risk from transporting materials associated with the Proposed Alternatives is evaluated and presented in Section 4.4 and Appendix G.

12 01 00 Comment Number 37

Comment noted.

11 01 02 Comment Number 38

Consideration of the Yucca Mountain site as a potential geologic repository site is a national policy prescribed by Congress in the NWPA. This PEIS analyzes the environmental impacts of the surplus Pu storage and disposition alternatives, not the impact of siting and operating a geologic repository. Whether or not the site is Yucca Mountain has little relevance to the comparison of alternatives when the same geologic repository is being used.

09 00 02 Comment Number 39

An environmental analysis has been conducted on all alternatives in the following areas: land resources, site infrastructure, air quality and noise, water resources, geology and soils, biological resources, cultural and paleontological resources, socioeconomic, public and occupational health and safety, waste management, and transportation. All impacts at proposed

sites are described in Chapter 4 of this PEIS and summarized in Sections 2.5 and 4.6 and the Summary to this PEIS for all resources specified.

08 03 01 Comment Number 40

The Department of Energy acknowledges the commentor's support for new missions at the NTS. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

PUBLIC MEETING ORAL COMMENTS, OAK RIDGE, TN
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Oak Ridge Public Meeting Oral Comments - April 2, 1996

Public Meeting Comments

Oak Ridge Reservation
April 2, 1996

Morning Meeting
Plenary (S&D & SS&M) Session

C: I appreciate the opportunity to speak today and thank the press for their participation in the meeting. When I was sworn into office there was a fear in the Oak Ridge area of the Oak Ridge production facilities being sent to design laboratories. Many citizens feel that through the programmatic environmental impact statement process the Oak Ridge technologies will be taken out of Oak Ridge, however, myself and my colleagues are working to ensure that this will not happen. I would like to thank the Citizens for National Security for their work and drive to recognize the work needed for humanity not just Oak Ridge. Your Congressional Officials and myself have worked this year to save the funding for Y-12. In my meeting with Hazel O'Leary, she stated that it was a no-brainer that DOE needs to leave the weapons production capabilities in Oak Ridge. The shutdown that occurred in Oak Ridge was concerned with the money that had been spent and was not necessary. When I visited Los Alamos National Laboratory to see their production facilities, I left a list of 18 unanswered questions. I have a list of those questions and answers available for everyone today.

The programmatic environmental impact statement process does a couple of things: 1) It allows input from people who know what they are doing; and 2) DOE has pitted the partners of the Manhattan Project against each other. DOE needs to be a team today! DOE should not allow the sites to pit against each other therefore allowing a site to save itself while sacrificing the DOE complex. I disagree with the new found fear of nuclear energy, weapons, and waste. The nuclear deterrent is why our country is strong and won the cold war, the United States must maintain its deterrent and production capabilities. DOE needs to leave uranium storage and production capabilities in Oak Ridge. Do not violate National Environmental Policy Act, why would DOE want to contaminate green field sites and leave brown field sites? This makes no sense! DOE needs to slow down and not move so quickly to move weapons production. DOE should not allow partisan and parochial politics to drive this process. The public and DOE can not allow this to happen. (Note: This comment is primarily directed toward SSM except for the bolded statements, which can be considered directed to both documents.)

1/08.03.01

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08 03 01 Comment Number 1

The Department of Energy acknowledges the commentor's support for continued HEU missions at the ORR. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

PUBLIC MEETING ORAL COMMENTS, OAK RIDGE, TN
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Oak Ridge Public Meeting Oral Comments - April 2, 1996		
Morning Meeting Breakout Sessions		
C: I do not think any citizen feels that Oak Ridge is a place for storage of plutonium. The option of collocated storage of plutonium and highly enriched uranium needs to be cut out of the final draft. If storage of plutonium did occur at Oak Ridge, this would require a radioactive waste facility to be built.	2/08.03.01	08 03 01
C: There is not an analysis for nonproliferation. This is the time for the United States to show more leadership. The United States should lay the ground work and show other countries how to handle the highly enriched uranium and place it under international control.	3/01.06.00	01 06 00
C: The deep borehole concept has several adverse effects and there are a number of issues raised with these effects. It seems that the deep borehole option should be placed on a secondary option list, so that the public would only need to discuss realistic options.	4/01.04.00	01 04 00
Q: The public would like to make comments on the technical and cost analyses reports. The dismantlement activities for nuclear weapons removed from the stockpile are vague, in particular Volume 3, page 185. I have questions about how the weapons are removed from the stockpile and dismantled in relation to Y-12. Where is this process in the realm of doing things? (Note: The response provided at the meeting did not appear to fully respond to the issue.)		01 04 00
Q: Are the weapons-usable 50 metric tons to be given to the United States Enrichment Corporation the same 50 metric tons in the Highly Enriched Uranium Environmental Impact Statement? Would the highly enriched uranium be titled to the United States Enrichment Corporation? If so, would the titled material be kept on DOE property with the United States citizens paying for storage until the United States Enrichment Corporation can take the material? Would the United States government have to babysit it? (Note: The response provided at the meeting did not appear to fully respond to the issue.)		01 04 00
Morning Meeting Summary Session		
No summary session		
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PUBLIC MEETING ORAL COMMENTS, OAK RIDGE, TN
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Oak Ridge Public Meeting Oral Comments - April 2, 1996	
Evening Meeting Plenary Session	
C: At the highly enriched uranium meeting it was stated that the draft Programmatic Environmental Impact Statement was going to be sent to us; however, we did not receive it. I would hate to see this happen again with the cost analysis report, by not having the report available to the public. Reviewing the cost information in the analysis report is very important.	5/08.00.00
C: No disposition of the material should occur. The time horizon is very truncated. What is long-term storage? If the spent fuel is stored more than 200 years in a repository, it will become non-radioactive and then could be mined. Fourteen tons of reactor grade fuel has been separated out in this document, but the total in the country is very large. DOE should avoid making problems for the future. Trying to destroy plutonium is both futile and unrealistic. Making the plutonium unusable may not be good for the future, because the plutonium will probably have to be recovered for energy and nonproliferation needs. It is assumed by the United States that the material will be safe, however, terrorists can do anything. DOE needs to have a more thorough discussion about plutonium, beyond the focus of tonight's meeting. Do not rush into this and make a mistake for the future. The National Academy of Sciences' report (from last summer) has some very good points.	6/08.03.01
C: This may be a problem that DOE cannot solve by itself. If the United States is headed toward energy problems DOE should not move too quickly.	7/08.03.01
C: It was first established that all of DOE's highly enriched uranium would be stored at Y-12. However, figure S-2 on page S-4 shows that all the highly enriched uranium would stay at Y-12; then page S-3 states that there are several different ways to deal with the highly enriched uranium. I also looked for cost information in the document. I am confident that the cost of moving the highly enriched uranium to other sites will be rolled into the cost analysis. Highly enriched uranium storage is important to Y-12 - it should be the preferred alternative.	1/08.03.01 cont.
C: Collocation of the material is for safeguards and security purposes.	
Evening Meeting Breakout Session - Remained together	
C: In reference to creating a radiation field as a proliferation deterrent, I do not think the radiation field would deter a terrorist or potential antagonist. The field will not eliminate the material, it would just make it difficult for future retrieval.	8/13.00.00
3	
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08 00 00	Comment Number 5	Cost data, along with technical and schedule data, was provided in Technical Summary Reports for storage and disposition in the summer of 1996.
08 03 01	Comment Number 6	The Department of Energy acknowledges the commentor's opposition to the disposition alternatives. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.
08 03 01	Comment Number 7	The Department of Energy acknowledges the commentor's support for long-term storage of fissile materials. Decisions on storage of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.
13 00 00	Comment Number 8	The intent is to make the surplus Pu as unattractive and inaccessible as spent nuclear fuels. A committed terrorist would have to have the technical specialists and equipment to transport these radioactive materials and conduct extensive remote chemical processing in order to extract the Pu for weapons use.

**PUBLIC MEETING ORAL COMMENTS, OAK RIDGE, TN
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Oak Ridge Public Meeting Oral Comments - April 2, 1996

C: The position of the local section of the American Nuclear Society is to endorse the "Protection and Management of Plutonium - Special Panel Report", especially its key conclusions and recommendations. For example: Strong support for the conversion of all plutonium now scheduled for release from the United States and Russian weapons stocks to a form which is protected from theft or seizure by intense radioactivity, and the prompt implementation of the reactors irradiation option for disposition of surplus United States and Russian weapons plutonium by employing available reactors in the United States, Russia, or other countries.	9/08.03.01
C: A lot of utilities are trying to get rid of reactors because of decommissioning and decontamination activities and cost. DOE may be able to purchase a reactor cheaply, then the government would only have to decontaminate and decommission that reactor.	10/06.00.09
C: The Stockpile Stewardship and Management and Storage and Disposition draft Programmatic Environmental Impact Statements are full of jargon and are hard to read and understand. These highly technical documents need to be comprehensive, and the documents should be written to an eighth grade level so that the average citizen will be able to read and understand them.	11/08.02.00
C: I am concerned about the socioeconomic impacts dealing with plutonium and its negative impacts. Negatives may be psychological versus real. These should be addressed in the document.	12/09.08.08

**Evening Meeting
Summary Session**

No summary session

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08 03 01 Comment Number 9

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

06 00 09 Comment Number 10

Comment noted.

08 02 00 Comment Number 11

The Department of Energy acknowledges and understands the need for education and communication with the public on the subject of risk, accident probability, and related subjects. To help meet the goal of providing meaningful information, several pages of explanatory information on risk have been included in the Appendices to the PEIS (Specifically see Appendix M).

09 08 08 Comment Number 12

The socioeconomic analysis estimates impacts to employment, income, housing, and community services. These impacts are estimated using standard methodology, and can be quantified and compared across sites. Addressing "risk perception" issues would be highly speculative and not quantifiable. Furthermore, it would not be possible to compare alternatives in a consistent manner.

PUBLIC MEETING ORAL COMMENTS, RICHLAND, WA
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Richland Public Meeting Oral Comments - April 11, 1996		
Public Meeting Comments		
Hanford Site April 11, 1996		
Afternoon Meeting Plenary Session		
C: According to the Programmatic Environmental Impact Statement and briefing, these actions are being taken because of the Nuclear Nonproliferation Treaty and are considered an international obligation. The Fuels Material Examination Facility has been considered for mixed oxide fuel fabrication and storage in the draft Programmatic Environmental Impact Statement. It is unclear how the Fuels Material Examination Facility could be used as a production plant and as a storage facility.	1/02.00.01	
C: I am concerned about destroying weapons that the United States may need later. The Russians can not be trusted, they may use their material to produce weapons, and to establish relations with terrorist groups.	2/01.03.00	
C: The plethora of Environmental Impact Statements has bombarded the public in terms of Programmatic Environmental Impact Statements and how to encompass the environmental impacts under them. Since there are so many programmatic documents being produced and the environmental impacts. The Environmental Impact Statements should be sub-projects of the Programmatic Environmental Impact Statements and not separate Environmental Impact Statements.	3/08.00.00	
C: I would like to see a shell environmental document (Programmatic Environmental Impact Statement) that could handle waste as it is generated. This could be accomplished by having the cumulative impacts for an Environmental Impact Statement being provided to an overall shell. As of now, the public only sees a portion of the cumulative impacts. The public should be able to see the whole picture.		
C: This is an exercise in futility. DOE should not lead the public on to think that a decision will be made based on this draft document. The decisions will be made for DOE by an extraneous group. This document has not progressed far enough in terms of technology, cost, research, and in discussions with Russia in order to be able to be meaningful enough to include the public for comment solicitation. It seems that these meetings are a disclaimer, so that DOE can check off public participation from its list.	4/08.02.00	
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		WM-001

Note: A number of documents submitted during the public meetings were recorded as part of the minutes. The same documents, in some instances, were also submitted as hand-ins at the end of the meeting. In those cases, the documents are analyzed once, either as part of the minutes or as stand alone documents.

Listed below are the names of the organizations/individuals who submitted documents as part of the minutes and the page numbers containing DOE's responses to the comments:

Tri-City Industrial Development Council,	3-763
Sam Volpentest	
State of Washington, State Representative,	
Shirley Hankins	3-1025
Benton County Commissioner, Sandi Strawn	3-65
American Nuclear Society	3-41
City of Richland, Councilman Ken Dobbins	3-147
City of Richland, Mayor Larry Haler	3-144
State of Washington, Department of Ecology,	
Max S. Power	3-1011

02 00 01 Comment Number 1

The FMEF is considered for use as a long-term storage facility for Pu and the impacts are included in Section 4.2.1 of the PEIS. For the production of MOX fuel, a generic facility was considered for all six DOE sites. At Hanford the MOX fuel fabrication facility would be located in the 200-Area adjacent to 200 East. The utilization of the FMEF would be a variant for MOX fuel fabrication at Hanford, which is bounded by the environmental analysis for the MOX fuel fabrication facility located in the 200-Area. Table 2.4-1 of the PEIS provides a brief description for variants which includes "Modification/Completion of existing facilities for MOX fabrication." The storage options for Hanford also include constructing a new facility.

Utilization of FMEF for the Upgrade Alternative would not preclude its use to also support Pu disposition activities, for either Reactor or Immobilization Alternatives.

**PUBLIC MEETING ORAL COMMENTS, RICHLAND, WA
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Richland Public Meeting Oral Comments - April 11, 1996		Afternoon Meeting Breakout Sessions	
C: I would like to thank DOE for the opportunity to speak today. If the Hanford Site is considered for storage and disposition, there should be a quick-pro-quo on the other laws, agreements, and treaties which are in place with the State of Washington related to clean-up. DOE needs to ensure that the clean-up of the Hanford Site will not be hindered. Acceptance of material should consider the storage facilities available and cost. Transportation of the waste off of the Hanford Site should require research on area weather and conditions. This draft Programmatic Environmental Impact Statement has not evaluated transportation issues as detailed as other Environmental Impact Statements. Transportation is a national issue and local officials are very concerned. Emergency preparedness will require proper funding and other state and local organizations will need to be kept abreast of the transportation of the material.	5/11.00.01	C: I appreciate the amount of work that has been placed in this draft Programmatic Environmental Impact Statement, however, I see some glaring omissions. The Fuels Material Examination Facility was not originally included in the document but now I understand the reason, since the facility was not functional at the time the document analysis was initiated. The Fuels Material Examination Facility is the newest DOE facility which could support mixed oxide fuel fabrication and DOE should consider the facility in the final Programmatic Environmental Impact Statement. The potential of using Hanford's capabilities should be considered. This option can be accomplished for just the cost of completing the existing facilities. In terms of considering life cycle costs for the next decade the Fuel and Materials Examination Facility is extremely good. I am confused about the economics, would life cycle cost or short-term economics be the overriding element? Short-term economics are perhaps foolish. I hate to see the Russians ahead of the United States again, as with what happened in space. The ordinary taxpayer thinks little about energy. Ordinary taxpayers and those who are not polarized in their thinking believe DOE is committed to the long-term. This material needs to be looked at not as a waste, but as an energy source. Long-term storage for the average citizen is 100 to 200 years.	1/02.00.01 cont.
	6/10.01.00		7/07.00.00
C: The Russian material should be placed in safe storage. I support the reactor disposition option for mixed oxide fuel for the following reasons: 1) The reactor burns the material so it will not be weapons-usable. By burning the fuel as mixed oxide, the material will be down graded; 2) The United States will be consistent with Russia and other countries' strategies; 3) The process is irreversible and makes it acceptable to other Nonproliferation Treaty countries; 4) The process has been proven based on existing technology here and in other countries; and 5) Using the reactor would generate revenues, which would off-set the disposition cost. A mixed oxide fuel facility may need to be built or is there a possibility of using an existing facility. British Nuclear Fuels has a facility that produces mixed oxide fuel and could handle this material. The mixed oxide fuel option is not an action that is against nonproliferation, it is focused on the	8/15.00.00		WM-001
	9/08.03.01		

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01 03 00 Comment Number 2

Comment noted. DOE is responsible for implementing the President's Nonproliferation Policy as a result of the arms reduction at the end of the Cold War. DOE is also implementing a Stockpile Stewardship and Management Program to maintain the core competency and capabilities in support of national defense missions.

08 00 00 Comment Number 3

The Department of Energy works to assure that each environmental document is not connected, in the NEPA sense, to other DOE-prepared sitewide EISs. In these documents, the cumulative impacts of all current and foreseeable new missions, plus deletions to current missions are analyzed. In this manner the public and the decisionmaker can see the whole picture on a Proposed Action at a particular site.

08 02 00 Comment Number 4

The Department of Energy acknowledges the commentator's support for coordination and increased understanding on the decisions to be made on the storage and disposition of weapons-usable fissile materials. The National Dialogue Project, which is beyond the scope of this PEIS, is being implemented by DOE.

11 00 01 Comment Number 5

Comment noted. DOE's Fissile Materials Disposition Program is an integrated effort that will require the participation of a number of DOE sites that have weapons material experience. DOE acknowledges the commentator's concern about the potential effect that the selection of Hanford for new missions could have on the Hanford cleanup program. It is DOE's intent that the implementation of Fissile Materials Disposition Program decisions will have little or no impact on ongoing clean up programs. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input. The decision process will also give consideration to existing agreements between DOE, the State of Washington, and the EPA.

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destruction of the material. Although some may think it is inconsistent with nonproliferation policy, the burning of mixed oxide fuel would ensure the destruction of weapons-grade material rather than the focus primarily being energy production. Thank you for allowing me to make my comments. C: We support the mixed oxide reactor option. It is a technically and economically viable option. Timeliness in this issue is very important - ten years is too long. This is an international issue that will not go away. Thank you for allowing me to make my comments. C: I understand that consolidated storage may need to occur, but it does not solve the problems as summarized by the National Academy of Sciences. All of the disposition options require pit disassembly and conversion. I don't think that pit disassembly and conversion needs to occur, because the standard process is not capable of handling the tons of material DOE is addressing. DOE is not ready to go forward with technology, because it has only been proven using kilograms. The current population is living with results of the haste in which the weapons program was put together. Funds need to be earmarked for the identification of waste streams created from pit disassembly and for conversion and development of the technology necessary to treat what will be generated in the conversion process. Taking the time and establishing technology to deal with waste may alleviate the possibility of the existing problems at Hanford happening somewhere else. C: [Prepared statement of Sam Volpentest (see attached)] C: The local government and community organizations hold real concerns for many issues regarding worker and community health and safety; the Hanford clean up; and the continued commitment to the Tri-Party Agreement. Organized a couple of years ago, the "Hanford Communities" is a group made up of community leaders, who look at issues dealing with local governments. The "Hanford Communities" has put together an advisory committee with expertise in the areas of concern. I would like to introduce some of these individuals here tonight. We will be delivering formal written comments later. I appreciate the openness of DOE on the issues. Transportation issues of the material and location of new material into the Hanford mission will receive scrutiny, and we want to ensure that decisions made by DOE through this draft Programmatic Environmental Impact Statement do not impede or preclude prior commitments to clean up the site. C: I appreciate DOE holding public meetings in Portland and Seattle. Plutonium is extremely toxic to humans and causes dramatic health effects. 80 micrograms can cause cancer to those exposed. Oxides of plutonium are more toxic than pure plutonium in elemental form. In reference to the waste stream chart, the waste streams from burning mixed oxide fuel are at the top end of the chart when compared with waste generated by the other options. I disagree with a previous speaker's statement that the reactor option offers irreversibility and eliminates	9/08.03.01 cont. 10/08.03.01 11/03.01.08 12/01.00.00 13/11.00.01 13/11.00.01 cont. 14/06.00.08
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10 01 00 Comment Number 6

Logistical planning and meteorological surveillance are standard concerns which normally receive a great deal of attention during transportation operations such as this; transfer of materials to Hanford will hold no exceptions. Emergency preparedness personnel (that is, Emergency Response Teams) will be supplied with the necessary equipment and training commensurate with DOT, DOE, and NRC regulations. Sufficient funding for these concerns will be available to satisfactorily ensure that potential contingencies are dealt with in an effective and timely manner. DOE provides liaison with appropriate agencies for special nuclear material shipments. However, due to their classified nature, specific information on times and dates cannot be provided.

07 00 00 Comment Number 7

The Department of Energy agrees that the materials are surplus rather than waste. Cost data, along with technical and schedule data, was provided in a Technical Summary Report for disposition beginning in late July 1996. Additional comments were noted.

15 00 00 Comment Number 8

Comment noted.

08 03 01 Comment Number 9

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 10

The Department of Energy acknowledges the commentor's support for the Reactor Alternative using MOX fuel. Decisions on disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

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Richland Public Meeting Oral Comments - April 11, 1996	14/06.00.08 cont.	weapons usability of the material. It is always possible to extract weapons-usable material from spent waste. The dates for opening a repository keep slipping with no end in sight. If Saddam Hussein or like organizations could get their hands on mixed oxide fuel they could make a scary weapon. I can't believe that DOE would want to transport mixed oxide fuel to England, considering the problems that Japan has had in transporting plutonium. Does the government endorse burning mixed oxide fuel? It is premature to attribute the Governor's support to the reactor option. This Programmatic Environmental Impact Statement is a shared responsibility, the public is having a hard time focusing on all of the Environmental Impact Statements. The piecemeal approach DOE is using does not allow the public to see the breadth and depth of the nuclear problem, which pits states against states, and sites against sites. National dialogue similar to the ones fostered by Tom Grumbly, Assistant Secretary for Environmental Management, and health and safety groups such as the Plutonium Round Table are needed to directly address the outcomes that should derive from the draft Programmatic Environmental Impact Statement.
C: There is a clear and present danger with this material. Ten to twelve years is an unacceptable time frame to deal with this issue. I will leave the Governor's comments on the storage and disposition of weapons-usable fissile material and ask that they be made available tonight and submitted to the record.	[Note: The following comments reflect an exchange between two members of the public]	15/01.02.00 cont.
C: There is a clear and present danger with this material. Ten to twelve years is an unacceptable time frame to deal with this issue. I will leave the Governor's comments on the storage and disposition of weapons-usable fissile material and ask that they be made available tonight and submitted to the record.	C: There is a clear and present danger with this material. Ten to twelve years is an unacceptable time frame to deal with this issue. I will leave the Governor's comments on the storage and disposition of weapons-usable fissile material and ask that they be made available tonight and submitted to the record.	16/09.09.08
No summary session	Afternoon Meeting Summary Session	4
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03 01 08 Comment Number 11

The Department of Energy is developing an Advanced Recovery and Integrated Extraction System (ARIES) prototype for demonstration of pit disassembly and conversion process to remove Pu from weapons pits and convert it into either an oxide or a metal. Unlike previous pit disassembly processes, the ARIES process is a low waste, dry process that does not generate aqueous liquid waste from dissolution of Pu in acid. The individual parts of the ARIES process have already been demonstrated using several dozen pits. The prototype program will demonstrate the complete integrated process at a scale that can be used to support the design of a production system that can disassemble and package the inventory of surplus Pu pits. The worst-case waste streams for operation of an ARIES production facility have been identified in the PEIS. Operation of the prototype will enable further refinement of these waste stream estimates.

01 00 00 Comment Number 12

Pit disassembly and Pu conversion use existing technologies. Waste streams are estimated based on the throughput of the facilities used for processing the Pu. When applying for operating permits from the State where the facilities reside, DOE must convince the state authorities that the waste streams meet the applicable standards and criteria set by the State.

11 00 01 Comment Number 13

Comment noted. DOE's Fissile Materials Disposition Program is an integrated effort that will require the participation of a number of DOE sites that have weapons material experience. DOE acknowledges the commentator's concern about the potential effect that the selection of Hanford for new missions could have on the Hanford cleanup program. It is DOE's intent that the implementation of Fissile Materials Disposition Program decisions will have little or no impact on ongoing clean up programs. Decisions on storage and disposition of weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input. The decision process will also give consideration to existing agreements between DOE, the State of Washington, and the EPA.

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C: [Prepared statement of Shirley Hankins (see attached)]	17/08.03.01
C: [Prepared statement of Sandi Strawn (see attached)]	
C: The Richland Chamber of Commerce supports the burning of mixed oxide fuel in light water reactors and not wasting what the United States has spent billions of dollars developing. This option would be less costly.	
C: The American Nuclear Society feels committed to the return of plutonium. The issue of nonproliferation brings in the political factor. The American Nuclear Society has prepared a study "Protection and Management of Plutonium - Special Panel Report" addressing the technical issues involved. The American Nuclear Society has decided on three things that are needed to do a good study: 1) Place recognizable people on the panel for the study; 2) The study should be from an international perspective; and 3) Look at the context of all plutonium in all places. The major finding of the study was to use the burn option because it supports nonproliferation. Burning changes the isotopic content of the material and will convey a responsibility on the part of the United States that they are serious. Contrary to other comments, none of the members of the study feel that the United States or Russia would use the material to make weapons.	
C: [Prepared statement of American Nuclear Society representative (see attached)]	
C: [Prepared statement of Ken Dobbins (see attached)]	9/08.03.01 cont.
C: [Prepared statement of Larry Haler (see attached)]	
C: [Prepared statement of Max S. Power (see attached)]	
C: Reactor fissioning uses existing technologies. It offers the fastest, least cost route and can achieve effective electric rate faces. This would be a win for the Northwest. DOE already has an agreement with Bonneville Power at the Washington Nuclear Plant-2 facility. The Bonneville Power employees on site can do all of this work. DOE should take into consideration the benefits of our relationship.	

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06 00 08 Comment Number 14

It is true that Pu can be extracted from spent fuel. However, the Pu is not considered weapons-usable until it is extracted from spent fuel. The goal of the Fissile Materials Disposition Program is to render the Pu to a state in which it is not directly weapons usable, like Pu in spent fuel.

01 02 00 Comment Number 15

The *National Environmental Policy Act* requires evaluation of all reasonable alternatives. Reactor use of the MOX fuel containing surplus Pu is a reasonable alternative for Pu disposition and, therefore, has been analyzed in the PEIS.

09 09 08 Comment Number 16

The human health impacts from potential accidents are presented in this PEIS for all of the proposed facilities including the facilities in the Borehole Option. For each of the anticipated accidents, the impacts analyzed include the cancer risk to workers and the maximally exposed individual (MEI), as well as the potential cancer fatalities for the regional population up to 80 km (50 mi). The anticipated accidents analyzed cover a wide spectrum of the potential accidents including those that have large consequences but low probability, such as criticality accident (a nuclear reaction) and earthquake (catastrophe). The anticipated accidents include an analysis of the initiating events, materials at risk, source terms, probabilities, and consequences.

08 03 01 Comment Number 17

The Department of Energy acknowledges the commentor's support for the Existing LWR Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

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[Note: The following two comments reflect an exchange between two members of the public]

C: Thanks for the opportunity to speak and for extending meetings to the Portland and Seattle areas. I would like to invite all of the participants tonight to attend these meetings. As a physician, the toxicity of plutonium is important to address. Plutonium is extremely hazardous. The inhalation of a very small quantity will cause cancer. However, plutonium oxides are more dispersible than the elemental form, therefore easier to inhale. The implication that waste streams from mixed oxide fuel would not be zero is incorrect. Mixed oxide fuel is a contributor to the waste streams, more so than other options being assessed, as well as compared to other energy sources that could be used. Waste from burning the material in light water reactors is higher than other stabilization options that are being considered. This option would add to a 50-year waste problem that DOE has not yet been able to solve. The United States can not consider the reactor option when DOE has not dealt with the present waste problem. Post haste and International Atomic Energy Agency oversight are necessary when dealing with this issue. To move forward and make more waste is irresponsible.

18/06.01.08

C: Waste disposal is a political problem and it is exacerbated by persons like yourself that do not understand.

C: The National Environmental Policy Act is the reason I am here today. It requires DOE to open up the process to public input. Other reasons for my attendance would be that I have live and worked in this area for a long time, which has enabled me to develop a lot of expertise on how to deal with uranium and plutonium. The security of our country is the most important driver of these decisions. Nonproliferation is not a good word to use if you want it to mean that it is to save the world. I have a major interest in the supply system. If the United States takes the lead, plutonium could be burned in local reactors. Other health and environmental related jobs need to be addressed. The information available such as the summary is excellent; the American Nuclear Society provision is a fine summary, and the National Academy of Sciences' report should be added to this decisionmaking process. All of these documents have a good point. I understand that the United States is just talking to the Russians with no evidence of anything other than talking being made. The Fast Flux Test Facility should be a part of the program. The tritium proposal for the Fast Flux Test Facility is great. DOE is not going very fast and the public should demand faster action. Lots of area citizens, except those here tonight, are uninformed about this issue.

19/01.06.00

C: The timing on the completion of the draft Programmatic Environmental Impact Statement and the closure of the comment period is too short to be able to provide responsible comments. The comment period should be extended.

20/08.01.00

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06 01 08 Comment Number 18

The environmental impact of the MOX fuel waste streams is presented in Chapter 4 and Appendix H of this PEIS.

01 06 00 Comment Number 19

Comment noted. The NAS report is included in the decisionmaking process.

08 01 00 Comment Number 20

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days.

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C: DOE needs to be financially sound with their decisions. The draft Programmatic Environmental Impact Statement should not just explain how to store and dispose of the material and how to keep even with Russia. I do not mind giving a couple of million to the Russians if that is the best use of the money to help alleviate this problem.	21/01.03.00
No summary session	
Evening Meeting Summary Session	
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Comment Number 21

01 03 00

Comment noted.

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COMMENTS BY
SAM VOLPENTEST, EXECUTIVE VICE PRESIDENT
TRI-CITY INDUSTRIAL DEVELOPMENT COUNCIL

TO
U.S. DOE
PLUTONIUM DRAFT PEIS PUBLIC HEARING
APRIL 11, 1996

ON BEHALF OF THE TRI-CITY INDUSTRIAL DEVELOPMENT COUNCIL (TRIDEC), WE APPRECIATE THE OPPORTUNITY TO OFFER OUR COMMENTS TO THE U.S. DEPARTMENT OF ENERGY PLUTONIUM DRAFT PEIS PUBLIC HEARING ON STORAGE AND DISPOSITION OF WEAPONS-USABLE FISSIONABLE MATERIALS.

TRIDEC IS A 31 YEAR OLD NOT-FOR-PROFIT ORGANIZATION WITH OVER 550 MEMBERS THROUGHOUT THE MID-COLUMBIA REGION OF WASHINGTON STATE. OUR MISSION IS TO PROMOTE THE ECONOMIC GROWTH, DIVERSIFICATION OF THE HANFORD SITE AND DEVELOPMENT OF OUR REGION. OUR MEMBERS INCLUDE AGRICULTURE, BUSINESS, EDUCATIONAL, HANFORD CONTRACTORS, LABOR, PORT DISTRICTS, THE MAJOR CITIES AND OUR TWO COUNTIES OF BENTON AND FRANKLIN. WE ARE DESIGNATED AS THE TRI-CITIES "ONE VOICE" FOR THE COMMUNITY BY THE DEPARTMENT OF ENERGY.

WITH THESE COMMENTS, WE WISH DOE WILL STRONGLY CONSIDER AND EVALUATE THE FOLLOWING ISSUES:

- THE PROCESSING AND TEMPORARY STORAGE OF EXCESS PLUTONIUM OR WASTE SHOULD NOT BE SEPARATED. 22/01.02.00
- THE FINAL DISPOSITION OF PLUTONIUM CANNOT BE EVALUATED WITHOUT CONSIDERING THE POLITICALLY EXPLOSIVE ISSUE OF THE SITE SELECTED FOR STORAGE OF THE WASTE. 23/08.03.00
- HANFORD IS A FEDERALLY OWNED SITE WITH FACILITIES, INFRASTRUCTURE AND SECURITY PROVEN AND IN PLACE AND HAS EXPERIENCE IN ALL ASPECTS OF PLUTONIUM TECHNOLOGY.

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01 02 00 Comment Number 22

Comment noted. For Pu disposition, the end state of all the alternatives described in this PEIS call for ultimate disposal in a geologic repository. Prior to shipment of the spent fuel or vitrified wastes to this geologic repository, onsite storage is planned. For the Existing LWR Alternative, the utility company operating the LWR would be responsible for storage of the spent fuel while the Canadian utility company would be responsible for the spent fuel in the CANDU Reactor Alternative.

08 03 00 Comment Number 23

The PEIS discusses the potential final disposal of the spent fuel if a Reactor Alternative was selected and the final disposal of the immobilized "logs" if an Immobilization Alternative was selected. There is no final disposal requirement for a Borehole Alternative. Both the spent fuel and the logs would be placed in the NWPA-HLW repository. This would take place whenever and wherever that repository is located.

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- AN EXPERIENCED WELL TRAINED WORK FORCE IS IN PLACE OR AVAILABLE TO UNDERTAKE A PLUTONIUM MISSION.
- SELECTION OF THE "PLUTONIUM BURN" OPTION COULD USE EXISTING AND AVAILABLE FACILITIES AT HANFORD. THEY INCLUDE FFIT - WNP-2 AND/OR WNP-1 - AND THE COMPLETED BUT UNUSED FUELS MATERIAL EXAMINATION FACILITY (FMEF).

I WILL BRIEFLY COMMENT ON THE ABOVE ISSUES:

ON SEPARATION AND INTERIM STORAGE, WE BELIEVE DOE MUST TAKE AN OVERALL "SYSTEMS" APPROACH TO THE PROBLEM. INTERIM STORAGE MUST BE BASED ON ACCEPTABLE WASTE FORMS WHICH IN TURN WILL DEPEND ON THE DISPOSITION OPTION. FOR EXAMPLE, IF THE DISPOSITION OPTION IS TO "BURN" THE PLUTONIUM AS MIXED OXIDE FUEL IN LIGHT WATER REACTORS, THE WASTE TO BE STORED IS SPENT FUEL. INTERIM STORAGE THAT IS NOT AN INTEGRAL PART OF A WELL-PLANNED DISPOSITION PLAN WILL BE POLITICALLY DIFFICULT, IF NOT IMPOSSIBLE, TO SELL TO THE PUBLIC. NO ONE, INCLUDING OUR TRI-CITIES, WANTS TO BE THE STORAGE SITE FOR THE PLUTONIUM WITH NO CLEAR AGREED UPON PLAN FOR ITS ULTIMATE DISPOSAL.

WE SINCERELY URGE DOE TO ADOPT THE "PLUTONIUM BURN" OPTION FOR MANY REASONS. FOR EXAMPLE, THERE IS NO NATIONAL POLICY AS TO WHERE TO STORE OR HOW TO DISPOSE OF THE MATERIAL. THE NATIONAL ACADEMY OF SCIENCE LAST YEAR STUDIED THE ISSUE AT GREAT LENGTHS AND CONCLUDED "THE ONLY FEASIBLE AND ACCEPTABLE METHODS WERE TO "BURN" THE MATERIAL IN A POWER REACTOR AS FUEL OR DISPOSE OF THE MATERIAL IN SECURE DEEP BORE HOLES. AT A RECENT PLUTONIUM WORKSHOP, TOM COCHRAN OF THE NATIONAL RESOURCES DEFENSE COUNCIL ENDORSED THE USE OF THE MATERIAL AS REACTOR FUEL WITH DISPOSAL OF THE SPENT FUEL RODS AT YUCCA MOUNTAIN. THE ABOVE SCENARIO PROVIDES OPPORTUNITIES FOR THE POSSIBLE USE OF EXISTING HANFORD FACILITIES SAVING THE TAXPAYERS MILLIONS OF DOLLARS.

OUR EVALUATION OF THIS ISSUE HAS IDENTIFIED MANY OPPORTUNITIES FOR POSSIBLE USE OF EXISTING HANFORD FACILITIES IN A PLUTONIUM DISPOSITION PROGRAM WHICH INCLUDES THE FOLLOWING:

- USE OF THE FMEF AS A PROCESSING FACILITY FOR CONVERSION OF THE METALLIC PLUTONIUM TO AN OXIDE FOR SAFE STORAGE.
- USE OF THE EXISTING FMEF AND PEP PLUTONIUM VAULTS FOR INTERIM STORAGE OF THE PROCESSED PLUTONIUM. ADDITIONAL STORAGE FACILITIES BEYOND THESE WOULD BE REQUIRED FOR THE MISSION. THE

22/01.02.00
cont.

9/08.03.01
cont.

1/02.00.01
cont.

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FMEF COULD PROVIDE THIS ADDITIONAL STORAGE REASONABLY AND ECONOMICALLY UTILIZATION OF THE FMEF AS A MIXED OXIDE FUEL FABRICATION FACILITY. THERE ARE NO OTHER PLUTONIUM FABRICATION FACILITIES IN THE UNITED STATES. THE FMEF HAS THE CAPACITY AND INSTALLED EQUIPMENT TO PERFORM THIS MISSION, WHICH WAS ITS ORIGINAL DESIGN FUNCTION.	1/02.00.01 cont.
DISPOSAL OF THE PLUTONIUM BY "BURNING" IN THE FFTF EITHER ON A DEMONSTRATION OR PRODUCTION BASIS. THIS COULD BE COUPLED WITH THE WNP-2 PROPOSAL FOR THE OPERATION OF THAT REACTOR WITH A MIXED OXIDE FUEL.	24/01.02.00
GOVERNOR LOWRY SUPPORTS THE BURN OPTION IN THE STATE OF WASHINGTON. WE STRONGLY BELIEVE THE DRAFT PEIS IS DEFICIENT AS IT DOES NOT EVALUATE THE COMBINED USE OF HANFORDS ASSETS FOR THE "PLUTONIUM BURN" MISSION. THESE ASSETS INCLUDE FMEF-FFTF-WNP-1 AND WNP-2. WE WILL SUBMIT A MORE DETAILED STATEMENT SUPPORTING THESE OPTIONS UNDER SEPARATE COVER. WE REQUEST THAT THE DEPARTMENT OF ENERGY EITHER REVISE THE CURRENT DRAFT PEIS OR ISSUE A SUPPLEMENT TO IT WITH AN OBJECTIVE EVALUATION OF THE HANFORD SITE "BURN" OPTION CONSIDERING THE UTILIZATION OF THE AVAILABLE ASSETS BEFORE REACHING A DECISION. THANK YOU FOR CONSIDERING OUR VIEWS ON THIS VERY CRITICAL NATIONAL ISSUE.	24/01.02.00 cont.
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01 02 00 Comment Number 24

Liquid metal reactors were not included as alternatives for Pu disposition in the PEIS due to the longer time and greater cost required to complete their construction. The FFTF, on the other hand, is an existing reactor and could be used for Pu burning. However, the limited capacity of the FFTF would limit the rate at which Pu could be dispositioned and would require a much longer timeframe for disposition than that which could be achieved with the reactor options addressed in the PEIS.

The Department of Energy is in fact considering the FFTF, pursuant to the ROD for the TSR PEIS. The ROD (December 1995, 60FR 63878) for the TSR PEIS addressed the FFTF for tritium production as follows:

A private group has recently suggested that it purchase the FFTF from DOE and DOE then contract with the private group to make tritium at that facility. In the [Tritium Supply and Recycling Final] PEIS, the use of FFTF was considered and dismissed as a long-term tritium supply option because the amount of tritium that it could produce would only meet a percentage of the steady state tritium requirements, and it was not reasonable to rely on operating the facility far beyond the end of its design life. However, DOE will evaluate the presentation made by the private group to determine whether the operation of the FFTF might be able to play any role in meeting future tritium requirements. If any changes are warranted to this ROD following that review, or further NEPA documentation is required, DOE will take appropriate action.

The Secretary of Energy has requested a review by the JASONS Panel (eminent academic scholars and scientists) as part of the evaluation of tritium production with the FFTF. Should the outcome of this evaluation lead to a DOE proposal to restart the FFTF for tritium production, additional environmental analyses would be performed as appropriate. If the FFTF were to be restarted, a substantial portion of the surplus Pu that would be used for MOX fuel could be used to fabricate FFTF driver fuel, thereby achieving the Spent Fuel Standard for Pu disposition through irradiation in the FFTF. Further description of the FFTF has been added to Appendix N of the PEIS.

The FMEF was a candidate storage facility under the Upgrade Alternative for storage of weapons-usable fissile materials.

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Prepared Comments
Shirley Hankins
Washington State Representative
8th District
April 11, 1996
Richland, Washington

I'd like to thank the Department of Energy for providing this opportunity to deliver comments on the Programmatic Environmental Impact Statement for Storage and Disposition of Weapons-Usable Fissile Materials. Clearly, this is an issue of great magnitude for all citizens of the United States, and especially for residents of the Tri-Cities because of the potential we have for direct involvement with this program.

I'm pleased to be able to provide comments on the management of material that previously had one use, that of nuclear weapons and weapons capability. What a positive course of action for both the United States, the Russian, and other former Soviet Union governments to put this material to a productive use.

With respect to the three options the Department of Energy is analyzing for disposition of surplus plutonium, I would urge the Department to select in whole or part the **Reactor Irradiation** option.

- ☐ This option, which is heavily endorsed by the National Academy of Sciences, offers the most timely method for rendering this material non-usable to terrorist or other threatening countries or organizations.
- ☐ Disposal of the surplus plutonium, through the form of Mixed Oxide Fuel, is a proven technology, already used in many reactors throughout the world.
- ☐ The use of MOX fuel in U.S. nuclear reactors would allow for the generation of valuable electricity. Imagine, actually putting material once packaged into nuclear weapons to productive use for generating electricity. Government regulation of MOX fuel use would ensure the material is used in a way so that public health and safety are optimally protected.
- ☐ Through the DOE's Hanford Site, and the Washington Public Power Supply System, we have the needed infrastructure and capability to fabricate and consume MOX fuel right here, offering the Department of Energy a timely, comprehensive, and efficient manner in which to dispose of surplus plutonium.

I hope the Department of Energy will give serious thought to the reactor irradiation option, and when it comes time to deliver the Record of Decision, that this option will be selected.

Thank you.

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TESTIMONY OF
COMMISSIONER SANDI STRAWN
BENTON COUNTY, WASHINGTON
at the
U.S. DEPARTMENT OF ENERGY HEARING
APRIL 11, 1996
RICHLAND, WA

Re: Storage and Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement

Good evening. My name is Sandi Strawn and I am a Benton County Commissioner. I represent the county in which most of the Hanford Reservation is located. I am providing testimony tonight on behalf of the entire Board of Benton County Commissioners.

The outbreak of peace has presented us with a decidedly better future and a significant challenge. Plutonium warheads - those very items we once felt were so necessary - now are surplus to our needs. Peace is at hand, but this country's work is not yet done.

I want to offer several pieces of input to your Draft Programmatic EIS.

1. Keep moving forward.

We are pleased to see the Department of Energy is taking steps to address this challenging set of issues. The Department has evaluated a host of potential approaches, and has made significant progress by developing the set of alternatives outlined in the Draft EIS. We applaud your effort to date, and encourage you to keep pressing ahead on this internationally important issue. The complexities of the problem should not be used as a reason for avoiding any action. The "No-Action" and "Long-term Storage" alternatives are neither acceptable nor effective.

2. Follow the recommendation of independent experts.

The National Academy of Sciences has suggested fabrication of plutonium into reactor fuel is one of the few promising alternatives in management and disposition of fissile materials.

3. We are willing to continue to do our part.

We recognize two of the critical steps in plutonium disposition could be supported at the Hanford Site. Those steps are the fabrication of mixed oxide fuel at the Fuels and Materials Examination Facility, and the fissioning of that fuel at WNP 2 and the Fast Flux Test Facility (FFTF).

As the host county government, we support the use of these facilities and the Tri-Cities area technical resources for these two activities. This should stand in contrast to the situation in Nevada, where the most notable product of intergovernmental relations has been a delay in solving national problems.

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4. The mixed oxide fuel approach is the least costly and quickest path.

As a representative of taxpayers, we urge you to use proven technologies whenever possible. When this is done, the costly steps of investigation and experimentation are avoided. The mixed oxide fuel approach has been proven viable in this country and others. No new technologies are needed, and parties have offered you their technologies and facilities to pursue this alternative. The mixed oxide fuel approach will allow us as a nation to take the biggest possible bite out of this problem with the least resources, and in the shortest period of time.

We urge you to move quickly to reduce the quantity of material which could find its way into irresponsible hands, and to quickly help the former Soviet states to reduce their stockpiles of nuclear material. The mixed oxide approach will provide the quickest demonstration of our seriousness, it will embrace a pathway that the Russians may emulate, and it will reduce stockpiles of materials.

These are the things we are FOR. Now let me mention one we are against.

5. Consolidation of plutonium at Hanford is not necessary.

The Draft EIS poses as an option the consolidation of all surplus plutonium materials at the Hanford Site. We strongly object to this approach. Benton County residents have been and will continue to willingly fulfill our part of the solution. We recognize our responsibilities to safely manage, stabilize, and dispose of the substantial amount of plutonium already existing at Hanford. But, we will not become the nation's dumping ground for all plutonium scrap and mixed waste. There are already enough items on our Hanford cleanup "to-do" list. Movement of plutonium materials should only occur right before treatment.

Thank you for conducting a hearing in Richland to hear from those who are most directly affected by DOE actions. We urge you to continue forward with timely development of technically sound and fiscally responsible solutions to these very important issues.

Linda Stawers
4/11/94

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AMERICAN NUCLEAR SOCIETY

Position Paper Abstract - Disposition of Plutonium

Short-Term: Surplus Weapons Plutonium

1. We strongly support conversion of all plutonium released from weapons stocks to a form in which it is protected from theft or seizure by intense radioactivity (the "spent fuel standard"). Place immediate emphasis on protecting stocks as securely as when they were active weapons. We urge that higher priority and attention be devoted to assuring that this standard is being met.
2. We recommend prompt implementation of the reactor irradiation option for disposition of surplus U.S. and Russian weapons plutonium, employing available reactors in the United States and Russia, or in third countries.
3. The time schedule for both initiation and completion of conversion should be shortened.
4. All released plutonium in the United States and Russia should be placed under international safeguards as early as possible.

Longer-Term: Civil Plutonium

5. Energy demand, especially for electric power, is increasing steadily in the developing countries. We cannot and should not wish these countries to forgo the benefits of abundant energy that the industrial world has enjoyed for so long.
6. The use of nuclear energy will take place primarily in industrialized countries, making fossil fuel resources more accessible and affordable for use in the developing world.
7. Current proven reserves of reasonably priced uranium are insufficient to support a long-term, major contribution of nuclear energy to meeting world energy demand. Breeder reactors can overcome this limitation.
8. The issue of the proper level and structure of development on the breeder and other advanced reactor systems calls for further assessment. We urge that this be undertaken.
9. The recent U.S. decision to stop all development work on reprocessing and the breeder should be reversed.
10. The development of permanent waste repositories is essential, since these will be needed for either spent fuel or fission product waste disposal.
11. We see no need for international uniformity in selection of fuel cycle options.
12. The IAEA should place increased emphasis on containment and surveillance and other nonaccountancy safeguards measures.
13. The IAEA should be called on to review the adequacy of national measures for protection of nuclear materials against subnational threats.
14. It is essential that the IAEA be assured of the financial, technical and manpower resources and the political support necessary to carry out its increasingly vital tasks.

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Comments of West Virginia Commission, Ken Eddin
April 11, 1996 Public Meeting on Storage and
Disposition of Weapons-Usable Fissile Materials
Duff's Representative Environmental Impact Statement

The Fast Flux Test Facility (FFTF) will need 800 kg
to one metric ton per year of weapons return plutonium
to fuel the multi-missions it will be asked to perform.
The FFTF will use a once-through fuel system that
converts the plutonium to a spent fuel standard. It
will not be recycled.

These FFTF missions include tritium for national
security, medical isotopes for cell-directed cancer
therapy and treatment of other major diseases, and
commercial isotopes for agriculture and industry.

Advanced Nuclear and Medical Isotopes, called ANMS,
is a consortium of companies negotiating with the
Department of Energy to operate the FFTF to privately
provide these missions for our Nation. ANMS has
uniquely experienced and professional support
for the privatization of the FFTF.

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Comments of West Richland Grassman, Hon. Dublin

ANWS has proposed an alliance with the Washington Public Power Supply System to jointly burn plutonium in the FFTF and WPP-2. That proposal provides synergism between the two facilities and will use the already constructed Fuel and Materials Examination Facility, called the FMEF, for plutonium fuel management.

There further take advantage of the reduced security issues of all the located on the Hanford site. The FFTF and FMEF already have state-of-the-art plutonium security systems. Eleven metric tons of the plutonium is already located on the Hanford site.

The FFTF creates a teaming opportunity with Russia. The United States wants Russia to use a once-through fuel system and not recycle. Russia wants to burn the plutonium in their fast reactors. The FFTF would demonstrate how to convert the plutonium to a spent fuel standard without recycle. They could be provided to A. Litvin.

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Comments of West Richland Councilman, Ken Dethlin

Converting weapons-usable plutonium to a spent fuel standard cooperatively with the Russians while providing nuclear isotopes as a win-win for both the Hanford area and the Nation.

I urge the Department of Energy to include the FFTF as a viable plutonium disposition option in the Programmatic Environmental Impact Statement on the Disposition of Weapons-Usable Fissile Materials.

Thank you,

Ken Dethlin

Councilman, City of West Richland, Washington
Member, American Nuclear Society Eastern Washington
Section, Public Information Committee

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**Comments of Richland Mayor Larry Haler
April 11, 1996 Public Meeting on Storage and
Disposition of Weapons-Usable Fissile Materials
Draft Programmatic Environmental Impact Statement**

Good evening. I am Larry Haler, Mayor of Richland. I also serve as Chairman of the "Hanford Communities," an intergovernmental organization that represents the interests of cities and counties most directly affected by Hanford. As you are concluding a long day of meetings, let me extend a somewhat belated welcome to the Tri-Cities!

I have a prepared statement I would like to read and leave with you. We will be submitting written comments within the month.

The Programmatic Environmental Impact Statement, or PEIS, on Storage and Disposition of Weapons-Usable Fissile Materials is of great interest to the City of Richland and the other local governments in this area. Hanford, directly to our north, is identified as one of six DOE candidate sites for long-term storage of weapons-usable plutonium. Two of the disposition alternatives noted in the PEIS are particularly well suited to Hanford.

We would be proud to have Hanford help reduce the global nuclear weapons threat. However, we do have some misgivings. Nearly half of all Hanford workers live in Richland. I am concerned about their health and safety, as well as their economic well-being. Public safety associated with transport of radioactive materials through our communities is a factor we must consider. We must also safeguard the quality of our natural environment.

Beyond these tangible issues, we are anxious that our community not be perceived by others in the Pacific Northwest as a dumping ground for radioactive wastes. As DOE is reducing employment opportunities at Hanford, we must recruit new enterprises into this area to remain viable. Positive community image is critically important to our economic diversification efforts.

Our formal written responses to this PEIS will be carefully developed. We have appointed a technical advisory committee to explore the health and safety, transportation, and socioeconomic impacts of a new plutonium mission for Hanford. The committee began its analysis this week, and we hope to have our elected governing boards review their work and recommendations by the end of the month.

(Over, please)

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Comments of Richland
Mayor Larry Haler

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Fabricating plutonium into mixed-oxide, or MOX, fuel and burning it in reactors is one of the disposal options noted in the PEIS. The Washington Public Power Supply System has made a proposal to the Department of Energy to burn a bundle of MOX fuel as a demonstration. Our City Council fully supports the Supply System in this endeavor. We also encourage DOE consider the Supply System's unfinished nuclear power plant on the Hanford Site as a second MOX fuel facility. The Fast Flux Test Facility, or FFTF, provides yet another opportunity for burning of MOX fuel. The FFTF offers additional value in the potential for production of tritium and vital medical isotopes. We also have at Hanford the "Fuel and Materials Examination Facility," or FMEF, the only facility in the country that has been designed and is available to cost-effectively manufacture MOX fuel.

As you can see, Hanford offers a complete, safe, and secure industrial complex capable of storing plutonium, manufacturing and burning MOX fuels, vitrifying waste products, and handling spent fuel. The Supply System and private companies have indicated interest in participating in this important endeavor. We have a talented and experienced work force and the industrial infrastructure necessary to perform a plutonium storage and disposal mission. Assuming we achieve necessary public understanding and support and address legitimate concerns through effective mitigative measures, I believe Hanford will prove to be well suited to play a plutonium storage and disposal mission.

In closing, I should mention that the short timeline for commenting on the PEIS has made our review particularly difficult. One problem is that there are very few copies of the PEIS currently available. We have requested additional copies for our committee and hope to receive them soon. I hope you will consider extending the comment period to give the public better opportunity to participate.

Thank you again for the opportunity to provide comments this evening. We will be carefully evaluating this opportunity for Hanford to be of service to the nation. You can expect a thoughtful written response to the PEIS from us.

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1215 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

Comments on Plutonium PEIS

April 11, 1996
Presented by Max S. Power
Nuclear Waste Program

My name is Max Power. I represent the Washington State Department of Ecology, and I am presenting the agency's comments.

I want to begin by stressing three basic points, based on positions taken by Governor Lowry at the time of scoping (August 1994) and the Plutonium Roundtable (October 1995):

- **Nonproliferation:** Action to convert weapons usable plutonium to form that discourage weapons use is urgent. The United States needs to be seen to be acting forcefully and with public support to assure that this material is not available for reuse in nuclear weapons. The consequences of *not* acting are immense.
- **Equity.** All the states and regions of the country benefited from the defense provided by nuclear weapons. Now all need to share in an equitable way in the overall costs and risks of closing the circle on production of nuclear weapons material. Washington State has borne more than its share of the costs and risks in the past. We have both expertise and facilities that can help deal with plutonium and radioactive wastes, but we are only willing to play a role if others assume their fair share of the burdens.
- **Cleanup commitments.** Washington will not accept additional burdens on Hanford that detract from or delay commitments to cleanup the legacy of past contamination.

Within this context, we offer these specific comments on the PEIS:

1. We appreciate the effort USDOE has made to provide public discussion on complex issues. As selection of disposition options proceeds, DOE should use information such as that developed in the draft PEIS to inform a broader national equity dialogue. Decisions about plutonium storage and disposal must be made in the broader context of such a dialogue, dealing with treatment storage and disposal of all surplus nuclear materials and wastes.

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2. We encourage DOE to take a conservative approach on storage options. It does not make sense to ship significant quantities of plutonium to a consolidated or collocated storage site, only to have to ship most of it again to yet another site for disposition. Near-term emphasis should be on selection of a disposition approach; long-term storage decisions can then be linked to the configuration of the disposition system.
3. Ecology comments DOE for the level of analysis and documentation in the PEIS:
 - a good basis for assessing generic disposition alternatives
 - recognizes need for additional NEPA documentation to select disposition sites
 - sufficient analysis to evaluate storage options once disposition path selected
4. We also emphasize the need to identify the full extent of risks, costs, technology development needs, and further requirements for public decision-making. This should be an important document contributing to public awareness and national equity dialogue.
 - The PEIS includes information that puts plutonium disposition in context of the legacy of weapons production. E.g. substantial information about wastes, storage facilities, etc. at candidate sites.
 - The PEIS makes reasonable efforts to identify emissions and waste streams from proposed storage, treatment, and disposal facilities. DOE is to be commended for using appropriate site-specific data in the conceptual analysis of the disposition options.
 - However, we are concerned that some materials may not be covered in this PEIS or others
5. Therefore, we ask DOE to clarify how--and how much of--Hanford plutonium stock is included.
 - Fig. 1.1.1-1 indicates 1.7 t. of Hanford Pu identified as "surplus". There is approximately another 2.1 t. in forms other than spent fuel. Some may be concentrated and become surplus; some may become waste. It is not clear that the latter category, which is explicitly beyond the scope of this PEIS, is included in other programmatic documents.
 - The PEIS needs more explicit discussion about the implications of non-pit forms of plutonium for the configuration of storage, treatment, and disposal options.

In conclusion, the disposal option, or combination of options, selected should:

- minimize overall risk to public and worker health, and to the environment;
- take account of equity among sites and regions;
- not divert resources from or delay cleanup of past contamination at nuclear weapons production sites;
- have a clear and reasonable path forward to develop and implement the technology; and
- accommodate the plutonium metal scrap and other forms that could nonetheless be used in weapons.

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Public Meeting Comments	
DOE Headquarters April 17 & 18, 1996	
Afternoon Meeting- April 17, 1996	
Plenary Session	
C: Most of the 14 tons of nuclear material at Rocky Flats is considered surplus and represents a concern. A decision needs to be made to treat this material as a waste: it is toxic and not a resource. The material needs to be put into a form that renders it proliferation resistant as quickly as possible. The options presented in the Storage and Disposition draft Programmatic Environmental Impact Statement are not viable options to obtain this objective. Geological repositories are not available and disposition options are reversible. The mixed oxide fuel option has many flaws. Mixed oxide fuel: 1) Is more costly than uranium; 2) Creates an opportunity for theft of plutonium; 3) Presumes that the material can be deposited in Yucca Mountain; 4) Generates heavy plutonium that may be attractive to other governments in the future; and 5) Needs to be safeguarded against criticality conditions. The risks outweigh any resource considerations. The electrometallurgical technology option should be rejected. DOE needs further research before the vitrification and ceramic technologies can be considered viable. The material needs to be put into a stable form for storage, but containers analyzed are only good for 50 years. DOE needs to focus on storage since no feasible disposition options are available. The technology alternatives need considerably more research and should be addressed in international dialogue.	1/01.00.00 2/08.03.01 3/08.03.01 4/08.03.01 5/08.03.01 6/14.00.00
Afternoon Meeting Breakout Session	
C: The draft Programmatic Environmental Impact Statement process continues to appear fragmented and convoluted. A particular concern that results from this fragmentation is that reprocessing is not comprehensively addressed in the Storage and Disposition draft Programmatic Environmental Impact Statement or addressed in any of the Programmatic Environmental Impact Statements. The use of electrometallurgical treatment as a reprocessing option, commonly referred to as "pyroprocessing," should have been considered under an Environmental Impact Statement instead of an Environmental Assessment. Another area that needs more attention from DOE is in their treatment of tribes as nations. DOE should notify tribes residing in the areas of proposed activities early in the process on a government-to-government basis, so that impacts of the actions can be reviewed against treaties with the individual tribes.	7/01.00.00 8/08.00.00 9/08.02.00
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01 00 00 Comment Number 1

The materials at RFETS would be stabilized under DOE's Environmental Management Program before they are packaged and shipped to the storage site(s) pursuant to this PEIS.

08 03 01 Comment Number 2

The Department of Energy acknowledges the commentor's opposition to the disposition alternatives. However, NEPA requires that DOE look at all reasonable alternatives and, therefore, reactor burning and immobilization must be considered. Suitability of waste forms for disposal in a geologic repository has been analyzed and is included in Appendix H of the PEIS. Decisions on the disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 3

The Department of Energy acknowledges the commentor's opposition to the Electrometallurgical Treatment Alternative. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

08 03 01 Comment Number 4

Research and development is both on-going and planned to support the disposition alternative. If either the vitrification or ceramic technology is selected, the ROD would include pilot facilities as a means of learning more about these technologies.

08 03 01 Comment Number 5

The Department of Energy acknowledges the commentor's support for the continued storage of surplus Pu (No Action Alternative). The materials would be stabilized and packaged for the long-term storage timeframe. Decisions on

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C: The Shoshone Tribe is against pyroprocessing technology being developed to dispose of nuclear material because it can be used to separate highly enriched uranium and plutonium from spent nuclear fuel. It should not be considered as an alternative in the Storage and Disposition draft Programmatic Environmental Impact Statement.	3/08.03.01 cont.
C: I would like to see DOE develop an outline for nonproliferation like the outline used in the long-term storage and disposition impacts fact sheet. The fact sheet outline goes through some of the categories addressed in the draft Programmatic Environmental Impact Statement. It would be useful for DOE to develop a standard framework that everyone agrees on in terms of analysis, which would outline the nonproliferation impacts that are trying to be measured. This would be useful to DOE even beyond the Storage and Disposition draft Programmatic Environmental Impact Statement.	10/01.00.00
C: DOE should provide the public with draft copies of the other analyses being prepared in parallel with the Environmental Impact Statement, and broaden the public support and involvement in the decisionmaking process.	11/08.00.00
C: I represent the Military Production Network. We sued DOE in an effort to have an integrated presentation of their proposed activities and to get public involvement in the process as required by National Environmental Policy Act. We have found the fallout of this action is what we call "participation proliferation," and unfortunately a further fragmentation of the issues. For example, the increase of waste resulting from the different programs is being addressed separately and not cumulatively. We, therefore, feel that the National Environmental Policy Act process is deteriorating as is DOE's image of open mindedness, primarily because the current approach is not addressing connections of various actions and is not comprehensive.	12/08.00.00
C: It is hard to comment on one Environmental Impact Statement when they are all interrelated.	13/09.10.08
C: It is important that the Federal Government conduct ongoing epidemiological studies of impacts within a 10 mile radius of the various sites.	
C: We are making a strategic mistake downsizing the weapons complex. There is no "New World Order". Red China is the largest communist state ever, and Boris Yeltsin may soon be removed from office. I think history will show that it was wrong to downsize our military.	
C: Some of what might be called fragmentation has in fact improved the efficiency of DOE activities. The Disposition of Highly Enriched Uranium Environmental Impact Statement is a prime example. It was a good idea to handle highly enriched uranium separately from plutonium because it was more appropriate to address disposition of weapons highly enriched uranium and weapons plutonium separately.	14/01.00.00
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disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

14 00 00 Comment Number 6

Comment noted. The United States currently has a joint effort with Russia to assess the technical feasibility of the various Pu disposition alternatives including plans for joint demonstration of some of the technologies. The success of this joint effort would provide the basis for negotiation with other nations.

01 00 00 Comment Number 7

While the PEIS discusses the generation of spent fuel as an indirect result of potential disposition actions, any subsequent reprocessing and extraction of Pu from that spent fuel is beyond the scope of the PEIS and the fundamental nonproliferation purpose of the disposition effort. However, consistent with U.S. policy not to reprocess spent nuclear fuel, the spent fuel from burning MOX in reactors will be disposed of in a geologic repository along with other domestic spent fuel.

08 00 00 Comment Number 8

The Department of Energy's evaluation of the electrometallurgical process for purposes other than disposition of fissile materials is outside of the scope of this PEIS.

08 02 00 Comment Number 9

The Department of Energy recognizes the special status of the American Indian tribes in relation to the Federal government. DOE has issued specific guidance for full involvement of tribes in the NEPA process. Further, DOE has prepared a detailed listing of the tribes that could be affected by Proposed Actions. All of the tribes on that list, and others who have indicated an interest in storage and disposition of weapons-usable fissile materials, have been notified about the PEIS on a regular basis.

Washington D.C. Public Meeting Oral Comments - April 17 & 18, 1996	C: Today's <i>Washington Post</i> had an article on the danger of nonproliferation. It appears that even the draft Programmatic Environmental Impact Statement process is adding to the threat because it delays appropriate actions being made in an efficient and direct manner and thereby increases the risk of others getting at it.	15/08.03.00
C: In a lecture at Stanford University, Professor Wolfgang Stöhl of Germany summarized the results of an Electric Power Research Institute report on European countries in the nuclear business. He stated that mixed oxide fuel is commonly used there under even difficult conditions. The European impression of the United States' policy is that we have our head in the sand and need to control, rather than ignore, the technology.	Afternoon Meeting Summary Session	16/01.06.00
No summary session		

01 00 00 Comment Number 10

Comment noted. DOE will use analyses to assess domestic and international policy impacts (including Nonproliferation Policy) and the Proposed Action described in the PEIS to support the ROD.

08 00 00 Comment Number 11

In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analysis were made available in the fall of 1996. Each of these analyses along with the environmental analysis and public input will be integrated into DOE's decisionmaking process.

08 00 00 Comment Number 12

The combining of meetings was done at the specific request of the public near several DOE sites and was not considered to have any negative impact on the public review process. This request was based upon a need to hear how these documents were related to one another and to avoid requiring public attendance at several meetings spanning several days. The Draft PEIS and reference documents were made available in advance of the public meetings.

09 10 08 Comment Number 13

The Federal Government, as well as other local governments and interested organizations, has conducted or sponsored relevant epidemiology studies for various sites analyzed and considered for Pu storage and disposition alternatives. These studies are described in Section M.4 of the PEIS. In addition, any site selected for a storage or disposition alternative will continue to have an extensive environmental monitoring program to ensure that any releases associated with normal facility operations will not impact human health.

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Morning Meeting - April 18, 1996	
Plenary Session	
C: Regarding the new DOE policy on integrated hearings particularly from a budgetary standpoint, the integration of hearings may be useful and interesting. However, this integration has made the opportunity for the public dialogue more difficult and less substantive. The Programmatic Environmental Impact Statements become longer and more technical as they progress throughout the National Environmental Policy Act process. Greenpeace does not like this format.	17/08.02.00
Morning Meeting Breakout Session	
C: I am not saying that the United States add capacity, just that we utilize the existing excess capacity. It will take seven to ten years to build a reactor, and approximately another fifteen years to complete the whole process. The United States is then looking at a twenty-five year time frame. During this twenty-five year time frame, the foreign excess capacity could be used to eliminate the materials.	18/06.01.09
C: Other comments I have are: 1) The statement in the document that a "mixed oxide fuel fabrication facility must be built", should instead state <i>may</i> instead of <i>must</i> ; 2) There will be no increase in spent fuel with or without reactors using mixed oxide fuel. The waste forms will be the same; 3) Credit should be given to displacement of uranium fuel that would have to be mined, milled, enriched, fabricated, and transported; 4) Mixed oxide fuel will use excess tails; 5) There will be no impacts on shipping, the same amount of material will be shipped to the reactors as is now; 6) The reactor option is the only one that reduces the fissile content; 7) The reactor option ensures closely reaching disposition as defined by the spent fuel standard in the document; and 8) The document needs to further explain that plutonium could be recovered from immobilization and vitrification.	19/06.01.08 20/09.11.08 21/09.11.08 22/10.00.00 23/08.03.01 24/05.00.08
C: Tables in the document incorrectly show an increase in the amount of spent fuel. Also, if the number of assemblies being transported is the same and DOE transports the material in a more safe secure environment, it would seem to me the fatalities should go down.	20/09.11.08 cont. 25/10.02.00
C: Many environmental and nonproliferation organizations would like to preclude the foreign option. The use of international plutonium facilities are antithetical to the United States policy. The European's have huge environmental problems. There are several questions to be answered before foreign industries can be used. The use of foreign industries is a proliferation risk. I am concerned with the safety issues of shipping the plutonium. However, this does not	26/01.06.00 27/10.00.00
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01 00 00	Comment Number 14
Comment noted.	
08 03 00	Comment Number 15
It is critical that DOE make good, sustainable decisions on the important issues related to the storage and disposition of weapons-usable fissile materials. Part of making good decisions is presenting the decisionmaker with the environmental impacts of taking action based upon a range of reasonable alternatives. Therefore, the time and money used in determining the potential impacts on our environment is well spent. The value of informed decisionmaking outweighs the risk of delay caused by the study.	
01 06 00	Comment Number 16
Comment noted.	
08 02 00	Comment Number 17
The Department of Energy acknowledges the commentor's concern about the integration of public meetings on draft EISs. The joint meetings on the Storage and Disposition PEIS, the Stockpile Stewardship and Management PEIS, and the Pantex EIS were held using an integrated format at the request of several organizations and citizen advisory boards. They stated that such meetings "would be more convenient and provide a less confusing format for public participants. It would avoid duplication, permit a much more efficient use of the public's time and allow a more informed decision about the issues."	
06 01 09	Comment Number 18
Europe is moving toward a balance between the capacity to fabricate MOX fuel and the capacity to utilize MOX fuel in reactors. Additionally, Europe has excess separated Pu stores which they intend to use as MOX fuel as the fuel fabrication infrastructure and reactor infrastructure permits. Therefore, use of European reactors for consumption of U.S. Pu-source MOX fuel would merely displace the use of separated European Pu and result in no net	

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seem to be a concern to DOE. The cost and time frame is immense. DOE needs to get on track and not be sidetracked with suggestions of using foreign industries.

C: There is an urgency on this problem. DOE could reassure the public that the problem is being solved if the mixed oxide option is chosen. DOE should not preclude any option even if it is controversial. The foreign option should be considered if it is the quickest way to get on with the job. I support the mixed oxide option.

C: As the population grows, you can project the need for future energy and the life expectancy of current facilities. New capacity will be needed in the future. Energy Information Agency projections show the electricity need and market.

C: There is no indication of the parameters considered for the environmental impact on global change. As for the questions of whether there is a need for energy - the answer is yes, demographics show the need through the continued growth of the country. Present facility life shows there will be the need for new facilities and/or capacity of this material. The carbon dioxide release number should be an important factor for evaluating the options. I understand that if plutonium is substituted for uranium in present plants that there would be no net environmental change on carbon dioxide from a global climate change. However, if a plant is partially completed or an advanced plant is put online, there would be a net change in the total carbon dioxide release.

C: There should be a broader scope of multi-purpose reactors in the final Programmatic Environmental Impact Statement.

C: There have been numerous documents which have looked at overseas facilities regarding nonproliferation and the development of National Environmental Policy Act documents. Should there be any consideration of overseas facilities, I would hope that the nonproliferation concerns are included in the assessment.

Q: Have decommissioning and decontamination costs been considered for all options, such as processing facilities, deep boreholes, vitrification, and reactors, when some of these options will not have decontamination and decommissioning costs associated with them? Is DOE considering that by the United States not participating in this technology and not having a technological lead that the United States is abandoning its right to participate in nonproliferation issues in the world? (Note: No response was provided at the meeting to these questions.)

C: I am concerned about cost information availability and the comment period ending before this information is available. This seems to circumvent the whole National Environmental Policy Act process. The driver for this is not nonproliferation, although you (DOE) imply that nonproliferation should be the driver. The point of the National

reduction in world inventories of separated Pu. Hence, the statement that Europe has no excess MOX fuel capacity. Additionally, facility utilization projections indicate that, while some excess MOX fuel fabrication capacity may exist in Europe for the next few years, current capacity is soon expected to be fully utilized for commercial MOX fuel fabrication. Therefore, the United States may not be able to rely on the use of existing European MOX fuel fabrication capacity for the entire disposition campaign. However, as a part of efforts to develop weapons-grade Pu MOX fuel, DOE is consulting with European Fuel Fabricators to benefit from their experience in MOX fuel fabrication and may have some MOX Lead Test Assemblies and/or initial core loads fabricated in Europe. Also, participation in the construction and operation of a MOX Fuel Fabrication Facility in the United States will be open to European fuel vendors.

06 01 08

Comment Number 19

Comment noted. DOE is considering the construction of a new facility for MOX fuel fabrication using surplus weapons-usable Pu, but also considers the conversion of existing facilities for MOX fuel fabrication with surplus weapons-grade Pu. Table 2.4-1 of the PEIS provides a brief description for variants, including "modification/completion of existing facilities for MOX fabrication."

09 11 08

Comment Number 20

The MOX fuels designed for serving Pu disposition would not stay in the reactors' cores for recovering their full economic values. The MOX fuel cycle for the purpose of Pu disposition for each refueling would be shorter than the current typical commercial nuclear power plants. The data developed for this PEIS assumed that the MOX fuel bundles would be removed as soon as the fuel had been irradiated to the point where it had met the Spent Fuel Standard. This assumption, resulting in a greater amount of spent fuel from the reactors, was used in order to bound the impacts for spent fuel generation and storage. Also, it would dispose of the excess weapons-usable fissile materials as quickly as possible.

DM-001

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Environmental Policy Act is public input; therefore, all of the information needed to make responsible and substantive comments should be available at the same time. Other DOE Environmental Impact Statements have shown the nonproliferation concerns in the document and this one does not.	33/08.00.00 cont.	
C: Prior National Environmental Policy Act documents including the Foreign Research Reactor Spent Nuclear Fuel Environmental Impact Statement and the Environmental Assessment on Electrometallurgical Treatment all incorporated specific sections on proliferation.		
C: The Russians have a different problem, they do not have light water reactors. They have mixed mononitride reactors, and there are some advantages to them. DOE should consider this option.	34/14.00.00	
C: Mixed oxide fuel is used in reactors. However, experience relating to the use mixed oxide fuels in reactors is not in the private/public domain, so the public cannot analyze it. The information on mixed oxide fuel technology should be made available to the public through the National Environmental Policy Act, if DOE has access to the proprietary technical information.	35/08.00.00	
Morning Meeting Summary Session		
No summary session		
DM-001		

09 11 08 Comment Number 21

The Avoided Impacts section of the PEIS (Section 4.9) has been updated not only to include avoided human health impacts from mining, milling, and enrichment operations, but avoided air quality impacts, avoided waste generation, and other avoided environmental impacts. This section includes the displacement of uranium fuel by MOX fuel.

10 00 00 Comment Number 22

The intersite transportation for existing LWR includes only transportation of material to pit disassembly/conversion and Pu conversion sites and transportation of material to the MOX fuel fabrication site since transportation from the fuel fabrication site and spent fuel transportation is already occurring. For the partially completed LWR, all transportation steps are included (to pit disassembly/conversion and Pu conversion, to the MOX fuel fabrication site, to the reactor, and to the repository) since no transportation is currently involved for the partially completed reactors (not in operation).

08 03 01 Comment Number 23

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. Decisions on disposition will be made based upon environmental analyses, technical and economic studies, national policy considerations, and public input.

05 00 08 Comment Number 24

The recoverability of Pu from each of the disposition alternatives is discussed in results of nonproliferation reviews which were published in fall 1996, and are included in the decisionmaking process. This nonproliferation report is included with other supporting documents in the DOE Public Reading Rooms.

10 02 00 Comment Number 25

The number of fatalities is based on several factors including the radiation environment of the package, the type of package used, type of vehicle, number of miles to be traveled, and the type of roads to be traveled. The PEIS evaluates the transport of MOX fuel assemblies and the associated blendstock to the fuel fabricator and then to the reactor site. After the fuel assemblies have been burned up in a reactor for the transportation analysis, the MOX spent fuel assemblies are assumed to be identical to uranium spent fuel assemblies. The same vehicles and packages will be used and all factors are assumed to be identical.

01 06 00 Comment Number 26

The two disposition alternatives that would involve foreign industries are the CANDU Reactor Alternative and the Existing LWR Alternative using foreign MOX fuel fabrication. In the former case, Canada as a nonnuclear weapons state, would burn both U.S. and Russian Pu in heavy water reactors. This alternative would require final approval from the Canadian Government. Both the U.S. and Canadian Governments would oversee the operations which would comply with domestic and international inspections and the Nonproliferation Policy. In the latter case, MOX fuel fabrication in existing European facilities would be conducted for a limited period of time pending availability of a domestic MOX fuel fabrication facility. The shipment and handling of Pu and fabrication of MOX fuel would likewise be conducted in accordance with international inspections and safeguards regimes.

10 00 00 Comment Number 27

The use of British and/or French facilities to produce MOX fuel is a viable option, and therefore included in the PEIS. Their facilities are readily available and currently producing nuclear fuel; this is a clear short-term advantage. Measures would be taken to safeguard materials throughout the production cycle. Nuclear industry-owned ships, specifically designed to transport radioactive materials, could be used to ensure appropriate safety and security of the cargo. Although cost is not the principal factor, there is little reason to believe that cost would be significantly higher for this method versus other MOX fuel production options. If this method is considered further, a cost analysis would be conducted prior to implementation.

09 00 08 Comment Number 28

The scope of this PEIS is to analyze the environmental impacts at each candidate or representative site as described in Chapter 3 of the PEIS. The general approach and specific methods for assessing environmental consequences, along with estimated results and potential cumulative impacts, are presented in Chapter 4. The information and environmental analyses are intended to address all significant issues raised during the scoping process. The general environmental impact on global change is beyond the scope of this PEIS with the exception of transportation. There is a description of the impact on Global Commons in Appendix G.

09 03 08 Comment Number 29

The net outputs of carbon dioxide using MOX fuel in an existing operating reactor, a partially completed reactor, or an advanced reactor during operation would be similar. The construction involved with completing a partially completed reactor or constructing an advanced reactor would produce a net gain of carbon dioxide. On a global scale, the gain would be minimal. The production of electricity from any operating reactor would significantly reduce carbon dioxide emissions relative to a similarly sized fossil fueled power plant.

01 00 00 Comment Number 30

Comment noted.

07 00 00 Comment Number 31

Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition beginning in late July 1996. D&D costs were also included, where appropriate, in the cost evaluations included in the Technical Summary Reports.

05 01 08 Comment Number 32

The United States is strongly committed to participation in nonproliferation issues. The United States is fully engaged in the IAEA, and the President has committed to offering surplus fissile materials for IAEA safeguards.

08 00 00 Comment Number 33

In the interest of openness and more informed decisionmaking, DOE released Technical Summary Reports to the public as soon as they became available. Cost data, along with technical and schedule data, were provided in Technical Summary Reports of both storage and disposition in the summer of 1996. Results of the nonproliferation analysis were made available in the fall of 1996. Each of these analyses along with the environmental analysis and public input will be integrated into DOE's decisionmaking process.

14 00 00 Comment Number 34

During the screening process to select reasonable alternatives for evaluation in the PEIS, several advanced reactor options including mononitride reactors were considered. However, because the technology of the mononitride reactors needs further development which would involve time and cost, this option was considered less reasonable than other reactor options using existing or more mature technologies.

08 00 00 Comment Number 35

All of the source material used in preparing the PEIS is available to the public in DOE Public Reading Rooms or upon request to DOE. DOE has used open, publicly available information to the maximum extent possible. No commercial organization's proprietary information was used in preparing the PEIS.