

PUBLIC SAFETY RESOURCES AGENCY, PORTLAND, OR,  
 W. P. MEAD  
 PAGE 1 OF 5

W. P. Mead, Director  
 Public Safety Resources Agency  
 P. O. Box 724  
 Portland, OR 97207-0724

June 6, 1996

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

RE: Personal comments on "Programmatic Environmental Impact Statement on Storage and Disposition of Weapons Usable Fissile Materials."

I am writing to voice concerns I have after being informed that the above FEIS includes burning weapons-grade product in reactors as a disposal option. I am faxing this document to your office in order to meet the filing deadline and will mail a printed copy.

I have not reviewed the FEIS, but would like to include my comments, as follow, into the official record. Due to the nature and scope of the issues involved, I also request that the Congressional Record of the Subcommittee Hearing, cited below, be included as an addendum to this comment document; specifically as the Record's testimony may be relevant to any proposal involving a change in the current status of the WPPSS #1 reactor facilities at the Hanford Reservation.

I also would take this opportunity to request (1) that a copy of the above FEIS document series be sent to me at the above address, and (2) that I be included on the mailing list to receive all future documents relating to this project.

If you review the Department's records, you will see that in the 1980's I was a consultant to several health and state agencies about several projects at the Hanford Reservation. In that capacity I testified before state legislative committees and working groups, advised public health departments, provided research services for citizens' forums and intervenors, and testified before a Congressional Sub-Committee about converting the WPPSS-1 nuclear generating plant.

While I agree with the Encapsulation option for short term storage, followed by Deep Storage disposal once the technology has been proven; I very strongly object to "processing" this new inventory of fissile material in power reactors because of the current lack of technical knowledge, the history of poor operational safety in this area of nuclear energy, and the creation of additional low-level and high-level waste streams that such a project would incur.

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F-050

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Comment Number 1

The Department of Energy acknowledges the commentator'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.

Several years ago I was asked to testify before a Congressional Sub-Committee about a proposal to convert the WPPSS Unit #1 at the Hanford Reservation [1/]. That project was a poorly-conceived plan to salvage the canceled WPPSS #1 power generator at taxpayer's and ratepayer's expense by taking experimental theory and scaling it up as a full-scale operational NEU testbed despite the Department's own peer review finding of its own in-house technical feasibility studies that warned of "...an outstanding safety issue, the problem of in-vessel re-criticality." [2/].

The idea of burning a MOX fuel mixture, while certainly achievable, is not advisable for several reasons. Although these reasons are valid regardless of where the project is sited, a siting of the reactor option at the Hanford Reservation would pose additional hardship on the populations and environment of the Northwest:

1. In order to fabricate MOX fuel, the fissile product(s) must be transformed from their current states, formulated to the desired level of enrichment, stabilized and then fabricated into new fuel assemblies. This process alone increases the probabilities of adding to the current MOX inventory and poses security risks during several stages of processing.
2. Manufacture of MOX fuel assemblies also will produce new waste streams that will increase the quantity of wastes by several times the volume currently associated with these same inventories in their present states. Although much of this waste will be "low level," these processes will necessarily also generate a new volume of TRU wastes, with the special handling required by those TRU waste streams. Our waste management efforts should be focused on reducing the current inventory of hazardous and/or radiologic wastes; not on a search on how to create new wastes.
3. In the past, projects such as these have depended on the use of new reactors or the modification of existing facilities to burn the new fuels. The time needed to complete construction of new facilities, or the modification of an existing plant, would be much greater than the time needed to construct an encapsulation facility and begin the vitrification/encapsulation process. If the United States sincerely wants to remove plutonium from the active SSM inventory, then the Encapsulation alternative would accomplish this goal much faster and at a greatly-reduced cost than would the reactor option.
4. Cost, of course, is yet another factor that must be considered when deciding the disposal options. The MOX-fueled reactor plan would undoubtedly require an outlay of several billion dollars to achieve the goals of even a mediocre "burning" option. In my experience, based on several years of research, the Department has never completed a significant project of similar scale within the timeline and budget estimates stated in its' studies, nor those specified in contracts with its' vendors. *g*

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Comment Number 2

The environmental impact of the MOX fuel waste streams is presented in Chapter 4 and Appendix H of this PEIS.

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Comment Number 3

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.

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Comment Number 4

Cost data, along with technical and schedule data, was provided in a Technical Summary Report for disposition beginning in late July 1996. This information will be integrated into DOE's decisionmaking process.

PUBLIC SAFETY RESOURCES AGENCY, PORTLAND, OR,  
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5. Transportation issues also must be examined on several levels: First, based on the "per-tonne-mile" costs for shipping the MOX components to the fabrication facility, and then shipping the assemblies to the reactor; and then at a greatly-increased "per-tonne-mile" costs for transporting the irradiated fuel assemblies from the reactor to a disposal facility -- assuming that such a facility exists by the time the reactor has been built.

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6. Speaking of disposal facilities, ten years ago we had more than 70,000 Metric Tonnes of irradiated fuel assemblies that the Department wanted to bury at Hanford's proposed SWIF Repository. Reactor physics being what they are, it is reasonably safe to assume that during the past ten years many of these same reactors continued to generate waste for which the Department still does not have a home. We should clean up this existing lethal legacy before constructing a new plant to generate even more waste.

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The argument can be made that once the MOX-fuel assemblies have been irradiated in a reactor, that the plutonium content is much safer from terrorists than in its present form. This is only marginally correct due to the dangers associated with separating the SWM from the fission products. It is my belief that the additional steps needed to change the SWM from its' existing form through the final disposal (hopefully in a dry burial vault somewhere within Hanford's Rattlesnake Mountain above the existing water table) is much more hazardous, costly and time-consuming than is justified.

I sense the re-emergence of a dangerous pattern in this project as it has been described to me. Many of us mistakenly believed that when the Department ceased its major production-oriented operations at the Hanford Reservation that its future efforts would focus on the remediation of the reservation's contaminated sites.

Instead, this proposal seems to be a replay of past efforts to salvage Hanford's reactor operations infrastructure at the expense of the public's health, wealth and safety:

1. As of January 1996, Hanford's TRIDEC infrastructure organization still wanted to convert the abandoned WPPSS-1 Power Reactor to a tritium production reactor. This proposal was the subject of the 1986 Congressional Subcommittee hearing cited above.
2. As of the present date, many of these same players have dropped the latest WPPSS-1 conversion plan in favor of using the FFTF as a tritium production reactor.

The above instances are cited only as examples of the continuing use of the local industrial/business communities in the Tri-Cities area to keep reactors operating at the Hanford Reservation. A far better option would be to channel these support efforts from existing and/or new reactor operations and to the immediate decontamination of the Hanford Reservation. *Q*

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Comment Number 5

Comment noted.

The Department should concentrate on rebuilding its image and increase its level of public trust instead of pursuing the reactor option. Any attempt to use the reactor option without first demonstrating a "good faith" effort to dispose of the current wastes at Hanford is morally indefensible and would call attention to the Department's 50-year history of having a "business as usual" mindset regardless of the public's wishes.

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Ten years ago Michael J. Lawrence, USDOE's Richland Operations Office Manager bragged about the amount of high level tank wastes that had been condensed during 1984. As I pointed out in my rebuttal [3/], that entire effort had reduced the Reservation's volume by less than the amount produced by a single day's operation of the PUREX Plant, and that figure only accounted for high level liquid wastes, thus ignoring the other waste streams generated by the PUREX Plant.

This mindset intensified during the 1980's, and we in the Northwest vividly recall several of the Hanford Reservation's more infamous projects:

1. The unnecessary restart of the PUREX Plant in 1983 to process target fuel assemblies that really had never been needed for national defense purposes;
2. The \$200 million dollar "Head Shed" modification project to enable the PUREX Plant to reprocess fuel assemblies from civilian power reactors;
3. Hanford's failure to meet INPO reactor operating standards;
4. USDOE's on-going refusal to comply with NRC safety regulations;
5. The \$70 million dollar expenditure to retrofit the N-Reactor's safety systems only after the Chernobyl-4 Reactor explosion;
6. The Department's attempt to violate the NPT by converting the WPPSS-1 Reactor from a commercial civilian power reactor to a Department-owned tritium production reactor;
7. The adoption of "ALARA" radiation dose "goals" for occupational exposures instead meeting the ICRP's established dose limits;
8. The insane desire to continue FFTF operations when all reason dictates its' decommissioning, not its' modification.

EMM is not a plaything. It is time to isolate this material from the environment without further delay. Encapsulate it and then bury it ~~without~~ first irradiating it. *W*

7/08.03.01

Sincerely:

*W. P. Mead*  
W. P. Mead

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Comment Number 6

Comment noted.

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Comment Number 7

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.

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Cited References:

- [1/] "Potential Conversion of WPPSS 1 Commercial Nuclear Powerplant to a Production Reactor." Oversight Hearing before the Subcommittee on General Oversight and Investigations of the Committee on Interior and Insular Affairs, House of Representatives, 100th Congress, 1st Session; held at Portland, Oregon, 12/07/1986; Serial No. 100-42, U.S. Government Printing Office, Washington, D.C., 1988.
- [2/] Ibid., page 63.
- [3/] "1984 Hanford Reservation Waste Generation Abstract." Public Safety Resources Agency, Portland, OR, 1986.

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Comment Form

These comments apply to the following document:

Storage and Disposition Draft PEIS

NAME: (Optional) William C. Rask  
ADDRESS: 10295 W. Warren Ave. Lakewood, CO 80227  
TELEPHONE: (303) 988-9651

The following comments are in regard to the long-term storage of plutonium as discussed in the Storage and Disposition of Weapons-Usable Fissile Materials Draft PEIS, dated February 1996.

**Introduction**

Surplus and non-surplus plutonium must be packaged and stored in a manner that ensures material control and accountability, safeguards and security, as well as public and worker safety for at least 50 years until the material is permanently dispositioned - i.e., "The Stored Weapons Standard." In placing the plutonium into such a storage configuration, the Department further desires to implement the President's Nonproliferation and Export Control Policy in a safe, reliable, cost-effective, technically feasible, and timely manner.

The Department has made significant progress toward a materials storage Record of Decision considering the referenced goals, however the options currently under consideration by the Department in the Material Disposition Program (MD) encompass only renovation of existing facilities and/or construction of new facilities at DOE sites thereby limiting options that provide for increased safety, timeliness, and cost effectiveness with less environmental insult. Furthermore the Department has limited itself by considering Storage to be only a domestic issue to be decided by the Secretary of Energy while Disposition is considered an international issue to be decided by a larger audience - Joint Chiefs, etc.

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**The Concept**

The relatively simple concept for interim storage of plutonium in minuteman missile silos that has significant political (international), cost, materials control and accountability, safety, and environmental impact advantages over the current options should be considered by the Department. This option makes use of existing facilities already designed and constructed for secure storage of plutonium under the most extreme conditions and the supporting infrastructure which is currently providing safety and security assurance for U.S. strategic weapons and associated launch systems.

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Comment Number 1

The Department of Energy utilized a screening process to select the alternatives which were analyzed in the PEIS. Safety, timelines, cost, and environmental impacts were factors considered in the screening process and continue to be considered in DOE's decisionmaking process.

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Comment Number 2

Both storage and disposition of weapons-usable fissile materials are important domestic and international issues. Decisions made in the United States can influence decisions in Russia, and possibly other foreign nations, and should result in international progress and cooperation to reduce the global nuclear danger.

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Comment Number 3

The use of existing facilities at non-DOE sites for storage was considered but eliminated in the screening process. The reasons for the elimination include cost, environmental, safety, and health concerns, and public and institutional acceptance. In the case of a Department of Defense (DoD) site, the additional costs and regulatory requirements for support facilities such as radioactive materials analytical laboratories, radioactive waste treatment, and nuclear material processing facilities associated with long-term storage could be very high. Furthermore, the public and other Government agencies would express concern over creating another DOE nuclear site when several are being phased out.

Discussion

Utilizing minuteman missile silos for storage of plutonium could be perceived as creating "new" plutonium silos. However, these missile silos have been storing plutonium for almost 30 years in a form and under conditions which pose a much greater risk to the public and workers than what is proposed herein. In fact, this concept would reduce the overall risk to the workers and public, eliminating plutonium sites by consolidating plutonium from several existing DOE sites.

With regard to the direct facilities needed for packaging, disassembly, material analysis, repackaging, and waste management, they are not required under this concept. The Department's proposed Primary Containment Vessels (PCV) could be placed within a third container/shipping problem that could be fully instrumented with continuous-remote monitoring -- say decontaminated "hoses" -- which would cause them to be removed and sent to a processing facility (LANL, for example). In principle this operation would be similar to any needed corrective or maintenance items required for the missiles and the respective nuclear packages today. A two part surveillance program could be implemented that would enhance the Department's knowledge of long-term storage, complementing missile site storage that could include: 1) a Storage Reliability Evaluation Program and 2) a Shelf-Life Monitoring Program, similar to existing pit surveillance programs.

Utilizing minuteman missile silos for storage of plutonium could be considered as a concept with increased risk since metal and oxide as well as "contaminated" pits would be stored. Plutonium in pits exists as a metal form, sealed within at least an innermost, and packaged in specially designed containers that ensure a very low probability of breach, metal oxidation, and dispersion of oxidation products. Metal pieces and ingots, packaged to the Department's new storage/packaging standard represents a similar packaging configuration with minimal risk similar to that of the pits. The issue is with oxides and their potential dispersibility in various accident scenarios. To mitigate this problem the Department could improve upon the packaging system or simply stabilize the material form to one that is not dispersible. Non-dispersible forms of oxide can in fact be produced through processing that could be at least as simple as the existing proposed oxide stabilization-calcination process without any detriment to proposed disposition alternatives. The Department appears to erroneously assume plutonium oxide is always dispersible from past practices of weapon production processing versus alternatives available for long-term storage.

Utilizing the silos for storage of plutonium would enhance transparency of plutonium storage and operations for purposes of nonproliferation assurance and compliance as well as compliance with nuclear arms reduction and control requirements established by the START treaties (not in DOE's backyard). Not only are the existing silos located in remote and open areas and readily observable through satellite networks, but they could be instrumented with safeguard systems similar to those already developed by SNLA for proposed use in disarmament agreements with Russia to enhance a regime of reciprocal inspection. The Department with interagency coordination could implement this concept in concert with or in addition to the present treaties thereby enhancing the United States' credibility and flexibility in negotiations on bilateral or multilateral nonproliferation of weapons-usable fissile material inventories. Doubtless plutonium storage facilities separate from existing Department sites would provide a level of safeguards and security and degree of nonproliferation assurance not reasonably achieved with existing or proposed facilities at DOE sites.

The capability to contain plutonium within a missile silo under the most adverse conditions has been demonstrated both by full scale proof of principle testing and severe accidents which have occurred within active missile silos. As a matter of comparison, Rocky Flats' most natural phenomena resistant facility, Building 371, is designed to about 1/2 Gs and is considered "good," while minuteman missile silos are designed to withstand forces greater than 100 Gs.

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Safeguards requirements could be satisfied through an "item" control and accountability system. This would require a 100% inspection and verification of the plutonium form and quantity that is loaded into each PCV and vessel. In addition to standard Department safeguards, surplus plutonium could be inspected and verified by the Department and IAEA, and/or Russia through a bilateral or trilateral agreement.

Storage of plutonium in minisilos should be licensed by the NRC. Independent regulatory oversight of these facilities with clear and definitive conditions and requirements will reassure the stakeholders and state governments that the plutonium is not a significant risk to the workers and the communities or the environment.

Difficulty has been experienced in the design and construction of the new storage facility in Russia - the cost effectiveness and implementation could be greatly expedited under the missile silo concept if utilized in Russia also - a significant improvement for the timeliness of nonproliferation. The same benefits that accrue to the Department and the U.S. would also be realized by the Russian utilization of their similar assets, thus bettering our relative positions in environmental safety and nonproliferation.

#### The Environmental Impact

Potential impacts to cultural and paleontological resources are eliminated since there is no ground disturbance for this concept, an improvement as compared to the three proposed alternatives (TPA). Again impacts to air quality would be less than the TPA since construction would be limited to modifications within the silos. There would be negligible impacts to community services similar to those of the TPA. There would be no impacts to land use nor any adverse visual resource impact with this concept. Water resource requirements for this concept would be less than the TPA. The potential for environmental justice impacts would be reduced.

Employment and income would generally remain stable in the storage locations with a small increase during the modification activities. Increases could be expected from international inspection and verification activities. DOE sites could expedite the respective cleanup missions which could impact required technical qualifications and worker skills.

The key environmental resource discriminators and issues of public concern are biological resources, waste management, public and occupational health and safety, and transportation. For biological resources and waste management the missile silo concept would have no or negligible impacts. In terms of public and occupational health and safety, the silos offer a far superior facility to any modification or new facility considered by the TPA. Transportation impacts would be similar to that of the proposed Consolidation and Co-location Alternatives.

#### Technical Description

A minisilo is basically a hardened concrete structure extending approximately 80-feet underground with a 12-foot diameter steel tube extending from the top to the bottom of the structure. At the top of the concrete structure is a circular room approximately 28-feet in diameter and 22-feet high. The missile and warheads were housed within the steel launch tube. The on-site launch support and security systems were housed on shock isolation tables in the open bay surrounding the missile tube.

The concrete structure, missile door and support systems are designed and constructed to survive detonation of a nuclear weapon in very close proximity to the silo and permit subsequent deployment of the weapons system. The resultant shock from the nearby detonation of a nuclear

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weapon would subject the silo structure to violent ground motions (and atmospheric over pressure) far exceeding those anticipated from any conceivable earthquake or other natural event.

A high degree of access security is inherent in the silo design and is assured by the Air Force SWAT teams that provide physical security for the active missile fields. Thus, the basic structure of the plutonium missile silos and the existing AF security operations provides a level of physical security and structural integrity and safety that is not reasonably achievable in any new or existing DOE storage vault(s). In addition, all of the missile silos are located in open areas that permit a degree of access transparency for demonstrated assurance of compliance with nonproliferation agreements and commitments that is also not available or readily achievable on existing DOE sites.

In addition to the added reduction of active missile silos, further consideration should be given to the strategic benefits of storing the material in silos that are in the same field of silos that will continue to be operational in the national defense. Future technological enhancements to protect our ability for retaliatory strikes will therefore benefit the protection for the plutonium storage silos also.

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In concept the missile silos would be modified for the storage of plutonium similar to LANL's vertical tube storage concept proposed for Rocky Flats and Russia. The primary containment vessels (PCV) could be stored within an additional stainless steel vessel to facilitate handling/transportation and to provide a third inerted containment barrier. Several of these vessels could be stacked in the multiple vertical storage racks of the silo. The storage racks could be spaced and constructed for enhanced criticality control and passive cooling. With a PCV loading process and procedures for metal and oxide, for example, that would ensure a 4.5 kg per PCV, the authorized limit for a PCV, each silo could safely store up to 4.4 MT of plutonium.

The Department in the final decision process is to consider implementation in a cost-effective and timely manner. Preliminary cost estimates provided to JMD for long-term interim storage facilities are between \$500M and \$1B with total life cycle costs at over \$4B. Total life cycle costs utilizing mission silos has been reviewed and preliminary estimates by industry experts to be 1/4 to 1/3 of that amount. Greater cost-effective concepts should be seriously evaluated. Rocky Flats proposes to construct a new passive storage facility for about \$70M with total life cycle costs of \$660M (to 2015). In comparison, four missile silos could be modified for about \$35M to contain all 12.9MT of the plutonium presently stored at the Site with a total life cycle cost for 20 years at \$150M to \$250M, as estimated by industry experts.

**REYNOLDS, ROBERT, VICTOR, ID**  
**PAGE 1 OF 1**

Comment ID: P0023  
Date Received: April 18, 1996  
Name: Robert Reynolds  
Address: Victor, ID

Transcription:

I want to voice my opposition to anyone bringing any nuclear waste into the State of Idaho. | 1/08.03.01  
That's all I got to say.

P-023

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**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.

RICHARDS, MATT, SAN DIEGO, CA  
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March 29, 1996

Matt Richards  
10383 Camino Banyon  
San Diego, CA 92131

Mr. J. David Nulton  
Director, NEPA Compliance & Outreach  
U.S. Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, DC 20026-3786

**SUBJECT:** Review of DOE/EIS-0229-D, "Storage and Disposition of Weapons-Usable Fissile Materials Draft Programmatic Environmental Impact Statement."

Dear Mr. Nulton:

I have reviewed the subject draft PEIS (Ref. 1). My comments are categorized into the following areas:

**Disposition Schedule:** Schedule for demonstration of disposition technology and completion of disposition.

**Final Waste Form Characteristics:** Suitability of the final waste form for permanent disposal, in terms of long-term safeguards requirements, long-term radionuclide containment, and potential for underground criticality.

**Miscellaneous Comments:** Issues associated with using borosilicate glass as a vitrification option, viability of using electrometallurgical treatment (pyroprocessing) as an immobilization option, and a recommendation for evaluating a coated-particle waste form for Pu immobilization.

Please note that I am submitting these comments as an individual. I have also provided these comments to General Atomics (GA). GA may choose to include my comments in a separate submittal to DOE.

1. Disposition Schedule

Before the draft PEIS (Ref. 1) was prepared, all potential options for Pu disposition were screened using criteria given in DOE/MO-002, "Summary Report of the Screening Process" (Ref. 2). The Ref. 2 criteria are similar to those used by the National Academy of Sciences (NAS) in its 1994 report (Ref. 3). One of the criteria, timeliness, was initially defined by DOE as follows:

"The technology concept should be demonstrated within ~20 years and disposition should be completed within ~50 years."

As stated, this criterion would have allowed for development of advanced, deep-burn reactor

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Mr. J. David Nulton

Page 2

technologies for Pu disposition, including the PC-MHR. Of equal significance, this criterion would have allowed for a single, ~1GW<sub>e</sub> plant (PC-MHR or LWR) to complete the disposition mission (~50 mt of surplus weapons-grade Pu) over the expected operating lifetime of the plant. In other words, the potential environmental impacts would be limited to those for a single plant.

In Ref. 2, the DOE changed the timeliness criterion to "require that the disposition be able to start within about a decade and be able to be completed within about three decades." The reason stated by DOE for adopting this more urgent schedule was input from the public and stakeholders "relating to the urgency of taking action stemming from the 'clear and present danger' associated with these materials." However, this reasoning is not supported by the DOE's own questionnaire data reported in Appendix A of Ref. 2 (see Figs. 1 and 2, taken from Ref. 2). From Fig. 1, five of the nine criteria received higher rankings of "very important" than given to timeliness. From Fig. 2, the ranking of timeliness relative to the other criteria indicates clearly that the questionnaire respondents viewed timeliness as being of secondary importance.

Other factors also do not justify forcing the Pu disposition mission to a more urgent schedule. According to the draft PEIS, the DOE also proposes to provide a long-term, 50-year storage system for Pu and HEU declared to be non-surplus. The non-surplus material is categorized into naval nuclear fuel, strategic reserves, material for weapons R&D, and programmatic materials. The DOE acknowledges that some of the non-surplus material could be classified as surplus material in the future. During the disposition mission, it is likely that surplus and non-surplus material would be stored and secured at common locations. For Pu being stored and secured at a given location, it would be absurd to determine that material classified as surplus poses a "clear and present danger," while material classified as non-surplus does not pose a similar risk, particularly when the classification boundary could change over time. The "clear and present danger" argument does not justify adoption of the more urgent disposition schedule, since fissile material of potentially unknown classification (surplus or non-surplus) will be in storage for time periods exceeding the more urgent disposition schedule.

The DOE acknowledges that the risks for theft and diversion of fissile material are greater in Russia than in the U.S., because of the less stable political climate in Russia. Perhaps the justification for the more urgent schedule is to encourage the Russians to adopt a similarly urgent schedule, thereby reducing the risks of theft and diversion. While plausible, this strategy is not consistent with desires expressed by the Russians. The Russians have actively encouraged development of the PC-MHR for Pu disposition. As part of a private, cost-sharing initiative with General Atomics and Framatome, Russian engineers and scientists are presently working on the PC-MHR design. At the recent Third International Policy Forum: Management & Disposition of Nuclear Weapons Materials (Lansdowne, Virginia, March 19-22, 1996) high-level Russian representatives confirmed their strong support for continuing development of the PC-MHR. Despite growing international support, the DOE has actively discouraged this private initiative. From Fig. 2, it is interesting to note that the criterion "Influence on Russia and Other Countries" was rated as being of somewhat greater importance than timeliness.

Finally, in its 1995 report on reactor-related options for Pu disposition (Ref. 4), the NAS viewed the more urgent schedule as a "very severe constraint" that did not provide a useful basis for comparative evaluations. For comparing the various reactor options, the NAS assumed that 50 mt of Pu would be processed over the nominal lifetimes of the reactors.

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Comment Number 1

The data in the referenced figures were presented as received; however, some respondents reacted to the timeliness statement that "The technology concept should be demonstrated within approximately 20 years and disposition should be completed within approximately 50 years." These respondents ranked our stated definition of timeliness low indicating that 20 and 50 years was too long and it was important for DOE to start and finish earlier. Also, public comments received through questionnaires, including comments to this document, continue to support the importance of starting disposition within approximately 10 years and completing within approximately 30 years.

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Comment Number 2

Comment noted. The U.S./Russian approaches need not necessarily be identical.

**RICHARDS, MATT, SAN DIEGO, CA**  
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Mr. J. David Nulton

Page 3

The impacts of adopting the more urgent Pu disposition schedule are clear:

- Advanced, deep-burn reactor technologies, including the PC-MHR, are eliminated from further consideration.
- The required number of ~1 GW, plants is increased from one to two, and the associated environmental impacts are doubled.
- The potential for strong international cooperation on Pu disposition and proliferation-resistant fuel cycles is hampered.

The first impact supports the current Administration's policy to curtail development of nuclear energy and eliminate development of advanced reactors. The second impact would tend to favor non-reactor, vitrification/immobilization options relative to reactor options, which is also consistent with the Administration's anti-nuclear policy. The third impact was probably not anticipated by DOE, but it clearly works against the most top-level objectives associated with the Pu disposition mission.

It is apparent that the decision to adopt a more urgent Pu disposition schedule is based more on political and institutional objectives in the U.S. and less on real issues associated with Pu disposition.

**Recommendation:** The PEIS should be expanded to include a flexible schedule that can accommodate disposition of Pu over the expected reactor lifetime, and advanced, deep-burn reactor options should be evaluated as part of the EIS process. The "clear and present danger" argument is highly subjective and open to a wide range of interpretation. This argument should not be used to eliminate alternatives that require only a somewhat longer schedule than currently dictated by DOE.

**2. Final Waste Form Characteristics**

An important issue for any Pu disposition strategy is the suitability of the final waste form for permanent disposal. Respondents to the DOE questionnaire (Ref. 2) recommended additional criteria that should be used to screen Pu disposition technologies, including several criteria related to final waste form characteristics. During the screening process and preparation of the draft PEIS, DOE gave little consideration to final waste form characteristics, other than the annual volume of high-level waste generated by a disposition alternative.

Volume alone is a poor measure of the environmental impact of the final waste form. In fact, a larger volume may be an attribute, since the dilution of Pu (residual Pu if the waste is spent fuel) provides greater resistance to diversion and reduces the potential risk of underground criticality. Also, the geologic repository loading density and required repository land area are determined by decay heat load of the spent fuel and not physical volume. For the PC-MHR, the annual volume of spent fuel would be ~10 times that from a commercial LWR or Pu-disposition LWR (PD-LWR), on an equivalent electrical energy basis, but the required land area for PC-MHR spent fuel would be about one-half that required for LWR spent fuel. The greater volume of PC-MHR spent fuel is a consequence of the low power density of the PC-MHR core, which helps to provide inherent, meltdown-proof safety during normal operation and hypothetical accidents. Approximately 83% of

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**Comment Number 3**

Generally, the goal is to complete disposition within 25 years after the ROD. This schedule will include the use of reactors (if selected as a disposition alternative) to irradiate the MOX fuel, meeting the Spent Fuel Standard, thereby fulfilling the purpose and need of the PEIS. The Deep Burn concept is not necessary to meet the purpose and need, and would require either more time, more reactors, or both.

12 00 00

**Comment Number 4**

Comment noted. See Appendix H of the Final PEIS.

Mr. J. David Nulton

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the PC-MHR spent fuel volume is high-purity, nuclear-grade graphite, which by itself would be classified as low-level waste. The high-level waste is confined to the fuel compacts, and the bulk of this waste (99.9%) is contained within the coating layers of the fuel particles. The PC-MHR would destroy and degrade weapons-grade plutonium well beyond the commercial LWR spent fuel standard. The final waste form would be rendered permanently resistant to proliferation, would be contained effectively for geologic time periods by multiple layers of highly corrosion-resistant ceramic coatings (Refs. 5 through 7), and would be well suited for permanent disposal in a geologic repository. The graphite is also highly resistant to corrosion (Ref. 8) and would serve as an additional protective overpack after permanent disposal. The long-term environmental impacts of permanent disposal would be significantly reduced, and potential high consequence scenarios would be eliminated, including recovery of spent fuel canisters to obtain Pu for weapons (i.e., the Pu mine issue would be eliminated), large-scale radionuclide releases caused by severe climatic changes and/or increased seismic activity (i.e., much less reliance would be placed on the geosphere for radionuclide containment), and underground criticality. With regard to these issues, PC-MHR spent fuel would be a nearly ideal waste form for permanent disposal (Ref. 9).

5/14.00.00

In screening reactor technologies for Pu disposition, the DOE has determined that the commercial LWR "spent fuel standard" was a sufficient end point. The basis for the spent fuel standard stems from the 1994 NAS study (Ref. 3). The NAS recommended that "options for long-term disposition of weapons plutonium should seek to meet a 'spent fuel standard' - that is, to make this plutonium roughly as inaccessible for weapons use as the much larger and growing stock of plutonium in civilian spent fuel." The NAS and DOE have recognized that high levels of radiation are the primary barrier to diversion of Pu in spent fuel and that this barrier decays over time. The NAS stated that "long-term options will be needed to reduce the proliferation risks posed by the entire global stock of plutonium, particularly as the radioactivity of spent fuel decays," and that "options for reducing these risks include placement of spent fuel in geologic repositories, or pursuit of fission options that would burn existing plutonium stocks nearly completely."

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cont.

Without performing proper analyses, the DOE has determined that geologic disposal will provide the necessary long-term safeguards. In justifying the spent fuel standard, the DOE states in Ref. 2 that "there is a path forward established by the Nuclear Waste Policy Act (of 1982) for disposal of spent fuel in a mined geologic repository, where geologic barriers will reduce the reliance on institutional controls." This conclusion is flawed for the following reasons:

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cont.

- There is no consensus among experts that isolation of spent fuel (or immobilized Pu) in a geologic repository would provide adequate long-term safeguards. It is important to realize that the NAS study (Ref. 3) makes no judgements and draws no conclusions regarding safeguards provided by geologic isolation. According to the Yucca Mountain Total System Performance Assessment (Ref. 10) and to the 1995 NAS report (Ref. 4), the eventual loss of institutional controls and human intrusion is considered to be a credible scenario for assessing long-term performance of a repository. An International Atomic Energy Agency (IAEA) advisory group concluded (Ref. 11) that LWR spent fuel "does not qualify as being irrecoverable at any point prior to, or following, placement in a geologic formation commonly described as a 'permanent repository,' and that safeguards should not be terminated on spent fuel." In a recent report (Ref. 12), the U.S. Congress Office of Technology Assessment (OTA) expressed "concerns about leaving plutonium in a repository that might be mined sometime in the future for the purpose of making weapons." This same concern was raised recently by an American Nuclear

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14 00 00

Comment Number 5

The Advanced Deep Burn Reactors Option, including MHRs, was considered in the screening process. Notwithstanding the many potential benefits of their use, the technical immaturity would call for costly and lengthy development and demonstration efforts to bring them to a viable status. The Screening Committee decided that the increased Pu burn-up offered by this option would not counterbalance its cost, schedule, or technical risks, and therefore, eliminated this option from further consideration.

Comment Documents  
and Responses

Mr. J. David Nulton

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Society (ANS) Special Panel on Protection and Management of Plutonium (Ref. 13). During a presentation at a recent DOE workshop (Ref. 14), Peterson concluded that "geologic repositories will provide attractive sources of fissile material for nuclear explosives for roughly 200,000 years." These concerns raised independently by NAS, IAEA, OTA, ANS, and others provide strong justification for developing a disposal strategy in which fissile materials are destroyed before geologic disposal, since safeguards and institutional controls cannot be guaranteed for tens of thousands of years.

- Even if it were determined that geologic disposal does provide adequate long-term safeguards, there is currently no permanent repository for spent fuel, and there is the distinct possibility that a repository would not be available for many decades. The political controversy associated with the Yucca Mountain repository project has slowed progress considerably. After spending more than \$2 billion, there has still been no determination of whether the site is acceptable for disposal of commercial spent fuel. In the Ref. 2 screening report, the DOE acknowledges "the tremendous cost and time being taken to evaluate the suitability of Yucca Mountain as a mined geologic high-level waste repository."
- Mixed-oxide (MOX) spent fuel from a PD-LWR would be significantly more attractive for diversion than commercial LWR spent fuel, particularly after the radiation field has decayed to lower levels. According to the 1993 DOE Pu disposition study (Ref. 15), a PD-LWR MOX spent fuel assembly would contain up to 30 kg of weapons-usable Pu, which is enough Pu to manufacture up to 4 weapons. For comparison, a typical commercial LWR spent fuel assembly would contain ~3.5 kg of similar quality Pu. A PC-MHR spent fuel element would contain only ~0.25 kg of much lower quality Pu. In addition to increased diversion risks, the high Pu content of PD-LWR MOX spent fuel would have a negative impact on the design of a spent fuel canister and repository loading strategies. Additional processing of MOX spent fuel may be required to lower the Pu density.

Other issues associated with unprocessed LWR spent fuel as a permanent waste form are poor long-term containment provided by metal-clad fuel rods within metallic canisters and the potential for underground criticality because of the relatively high concentration of fissile material in LWR spent fuel (especially in MOX spent fuel). According to the Ref. 10 performance assessment, a large fraction of LWR spent fuel would become exposed within several hundred to several thousand years because of the expected failure of Zircaloy cladding and corrosion of metallic canisters, and the only remaining barrier for release to the accessible environment would then be the surrounding geologic media. The effectiveness of this barrier for long time periods is uncertain and could be compromised by unforeseen events, including climatic changes and increased seismic activity. In testimony before the House Commerce Subcommittee on Energy and Power on June 30, 1995, John Cantlon, Chairman of the Nuclear Waste Technical Review Board (NWTRB), stated that the NWTRB "has repeatedly urged the DOE to develop a robust, long-lived waste package that will work together with other engineered barriers and the geology at the site to provide long-term isolation of the radioactive waste from the accessible environment." Cantlon stated also that "the use of such waste packages can help improve confidence in the long-term performance of the repository and thus facilitate licensing of the facility." Other experts on disposal of high-level radioactive waste have stated (Ref. 16) that "any strategy of isolation should emphasize the near-field containment of radionuclides, a function primarily of waste form or 'waste package' performance" and that "strategies that rely solely on long travel times, dispersal, or dilution, implicitly presume release and

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Mr. J. David Nulton

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movement of radionuclides." In a recent report (Ref. 17), the NAS concluded that the most harmful releases of radionuclides from a geologic repository could occur well after 10,000 years, which further underscores the need to provide effective near-field containment of radionuclides for geologic time periods. Other potential benefits of superior near-field containment are less required geological characterization of the candidate repository site and greater likelihood that a given site would be found acceptable.

Recently, Bowman and Venneri proposed scenarios in which fissile material disposed in a geologic repository could eventually assume unstable critical configurations, leading to supercriticality and large energy releases (Ref. 18). The Bowman/Venneri hypothesis has been heavily criticized, on the grounds that the scenarios are highly contrived, based on idealized assumptions, and are highly improbable (Ref. 19). For LWR spent fuel, the Bowman/Venneri hypothesis may be highly improbable, but geologic time scales could provide sufficient time for even highly improbable scenarios to occur. In the Ref. 19 critique of the Bowman/Venneri hypothesis, it is stated that design choices could reduce the potential for underground criticality, including "dilution of fissile material" and use of "highly durable ceramic waste forms."

Final waste form characteristics (and not just near-term diversion resistance) will determine the overall schedule for achieving effective disposition of plutonium. Plutonium disposition using deep-burn reactors like the PC-MHR could satisfy long-term safeguards requirements without relying on the availability of a geologic repository or the determination that the repository would provide the needed long-term safeguards. This is a very significant advantage for deep-burn reactors that has been completely overlooked during the DOE screening process. PC-MHR spent fuel would be a highly stable and highly diversion resistant waste form during potentially long-term storage and after permanent disposal. If future generations could respond to the DOE questionnaire, they would undoubtedly rate final waste form characteristics as the most important criterion for evaluating high-level radioactive waste forms, including those generated from disposition of surplus plutonium.

**Recommendation:** Final waste form characteristics and long-term environmental impacts should be given a high priority when evaluating technologies for Pu disposition. Advanced technologies that produce clearly superior permanent waste forms and have the potential to eliminate long-term, high-consequence scenarios should be evaluated as part of the EIS, particularly if the schedules for implementing these technologies are not significantly longer than those for more established technologies and if the potential for strong international collaboration exists. The PC-MHR would clearly meet these conditions.

3. Miscellaneous Comments

Use of Borosilicate Glass for Vitrification

The vitrification alternative proposed in the draft PEIS would involve manufacturing borosilicate glass logs containing Pu and high-level waste. Recent evaluations have raised significant issues that may preclude borosilicate glass as a host phase for immobilization of plutonium. These issues include potentially poor long-term durability in a geologic repository and the potential for underground criticality. These issues received considerable attention during a recent DOE Plutonium Stabilization and Immobilization Workshop in Washington, DC (December 12-14, 1995). Since weapons-grade Pu consists mostly of the fissile isotope Pu-239, with a half-life of ~24,000 years, the time over which the waste remains highly radiotoxic and is of concern for

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cont.  
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underground criticality would likely exceed the expected lifetime of the glass. Scientists at Argonne National Laboratory have been developing a more durable glass for Pu immobilization (Ref. 20).

**Recommendation:** DOE should acknowledge the potential problems with borosilicate glass and evaluate alternative glass forms during preparation of the EIS.

6/05.01.08

**Viability of Electrometallurgical Treatment**

According to the draft PEIS, the DOE will consider electrometallurgical treatment as an option for Pu disposition. Electrometallurgical treatment was derived from pyroprocessing technology developed for reprocessing liquid metal reactor spent fuel. In its 1995 report (Ref. 4), the NAS evaluated pyroprocessing as an option for Pu disposition. The NAS determined that pyroprocessing has several disadvantages that "effectively rule it out as a serious competitor for the near-term plutonium disposition mission." The NAS raised concerns with regard to the maturity of the technology, the size of the facility required to complete the disposition mission, and suitability of the final waste form for permanent disposal.

7/05.03.08

**Recommendation:** In light of this evaluation by the NAS, the DOE should provide stronger justification for continuing to evaluate electrometallurgical treatment as a viable option for Pu disposition.

**Coated-Particle Waste Form for Pu Immobilization**

Coated particles were once considered by the DOE as an alternative waste form for immobilization of high-level waste, and research programs were conducted at Pacific Northwest Laboratory and Oak Ridge National Laboratory (ORNL) in the early 1980s (e.g., Refs. 5 through 7). The feasibility of coating high-level waste was established at ORNL, and coated particles were judged to have by far the best performance potential of the candidate alternative waste forms.

For plutonium immobilization, the more established processes developed for coating nuclear fuel would be more applicable. One concept for a plutonium-immobilization, coated-particle waste form would be similar to a gas-cooled reactor fuel element. Kernels composed of zircon, zeolitic, or alternative materials and loaded with plutonium and neutron poison would be coated in a fluidized-bed coater. The coated particles would be loaded into holes within a graphite container. The coated particles could also be consolidated into compacts prior to loading into the graphite container. To provide additional diversion resistance, vitrified high-level waste could be placed into some of the holes in the graphite container. The graphite containers would be loaded into metal canisters. The proposed coated-particle plutonium waste form would offer a number of advantages:

8/14.00.00

- (i) The waste form would be well-suited for both long-term interim storage and permanent geologic disposal. The coatings would provide defense-in-depth to ensure that the plutonium and neutron poison remain together for hundreds of thousands to millions of years and to ensure that the plutonium does not migrate through the geosphere to the accessible environment. Providing this extra measure of containment should increase the confidence of regulatory agencies, stakeholders, and the general public in long-term integrity of the waste form.
- (ii) The graphite, which is also highly corrosion resistant (Ref. 8), would provide structural stability for very long time periods.

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**Comment Number 6**

Alternative glass forms were evaluated before issuing the Draft PEIS. These results are reported in the document (available in DOE Public Reading Rooms) entitled *Screening of Alternative Immobilization Candidates for Disposition of Surplus Fissile Materials*, February 9, 1996 (UCRL-ID 118819 [L-20790-1]).

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**Comment Number 7**

The Electrometallurgical Treatment Alternative was considered a reasonable alternative after completion of the screening process and scoping for the PEIS. The NRC recommended successful demonstration of the electrometallurgical treatment process prior to implementation. Upon making the decision on disposition technologies, DOE will demonstrate these technologies prior to their implementation.

14 00 00

**Comment Number 8**

During the screening of alternatives for inclusion in the PEIS, various immobilization forms were considered. The decision was made to include immobilization in ceramic and glass forms. The specific ceramic form was not identified. R&D is both on-going and planned to support the disposition alternative(s), which would include pilot facilities for processes (such as ceramic coated particles) and materials, as necessary. Decisions on disposition of weapons-usable fissile materials will be based upon environmental analyses, technical and economic studies, national policy considerations, and input.

Mr. J. David Nulton

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- (iii) Because containment is provided by the coatings and structural stability is provided by the graphite, the canister design would be very simple and inexpensive.
- (iv) The interim storage period could be extended for very long time periods, which may be necessary if a repository is not available or if other options are pursued for permanent disposition of plutonium. If necessary, the radiation barrier could be replenished by loading additional vitrified high-level waste into the graphite containers.
- (v) The technologies needed for all components of the waste form are fairly well established, and the disposition mission could be completed within the time constraints imposed by DOE.

8/14.00.00  
cont.

**Recommendation:** DOE should evaluate the proposed coated-particle waste form for Pu immobilization as part of the EIS process.

In general, I believe that DOE has manipulated (if not corrupted) the EIS process in order to suit specific political and institutional objectives of the current Administration. These actions are certainly not consistent with the intentions of the National Environmental Policy Act of 1969. The DOE has taken similar actions with regard to the PEIS on tritium supply (Ref. 21). I strongly encourage you to consider the comments that I have provided in this letter. The DOE should put the technology evaluations associated with the EIS processes back on a level playing field.

9/08.02.00

Sincerely,



Matt Richards, Ph.D.

cc: The Honorable Randy Cunningham  
Representative, California 51st District  
227 Cannon House Office Building  
Washington, DC 20515

Mr. David Alberstein  
Director, Defense Reactor Projects  
General Atomics  
Power Reactor Group  
P.O. Box 85608  
San Diego, CA 92186-9784

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08 02 00

Comment Number 9

Comment noted. The alternatives analyzed in the PEIS were determined through a screening process that included public input on the selection criteria. This process was not politically or institutionally biased.

Mr. J. David Nulton

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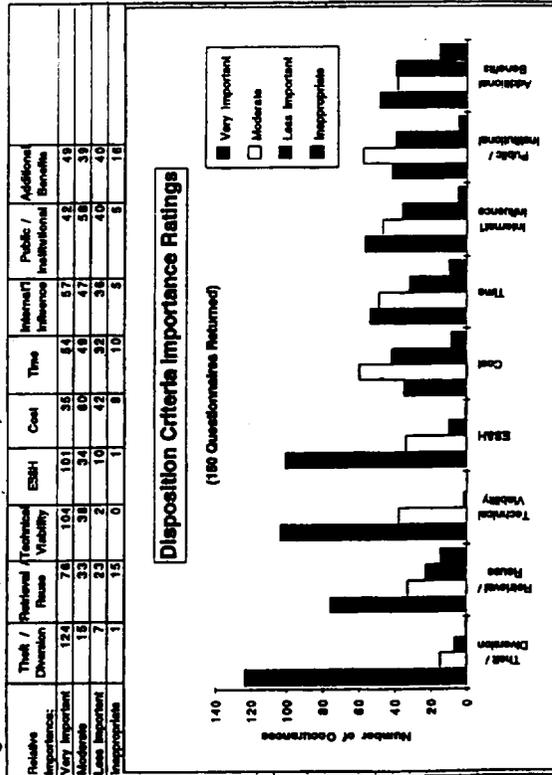
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Figure 1. (From DOE/MO-002, A.4.2.)



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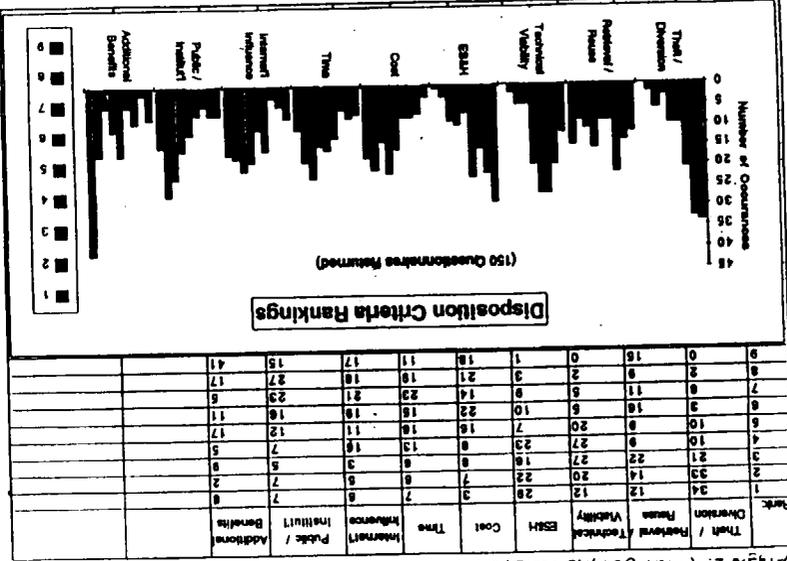


Figure 2. (From 00-140-002, K&L)

ROCKY FLATS CITIZENS ADVISORY BOARD, LOUISVILLE, CO,  
RUEBEN O. MAES  
PAGE 1 OF 2

## ROCKY FLATS CITIZENS ADVISORY BOARD

An Advisory Board to the U.S. Department of Energy

### MEMORANDUM

TO: Office of Fissile Materials Disposition  
FROM: Erin Rogers *ER*  
Rocky Flats CAB, Program Coordinator  
DATE: March 25, 1996  
SUBJECT: Citizen Comments on the Programmatic Environmental Impact Statement

I am forwarding to you an article that was written by a citizen of the Denver area. Mr. Reuben Maes asked that I forward this to you for input as you consider options for disposition of plutonium.

This is not the opinion of the Rocky Flats Citizens Advisory Board. Our role is simply to pass along this information to you.

Any response should be directed to:

Mr. Reuben O. Maes  
P.O. Box 565  
Louisville, CO 80027

Thank you.

9035 Wadsworth Parkway Suite 2250 • Westminster, Colorado 80021 • 303-420-7855 • Fax 303-420-7579

M-007

NPS Newsletter

July 1988

Radioactive Waste Disposal Using Tectonic  
 Plates and Continental Drift Technology

Stephen O. Maes

Not long ago the earth's crust, the lithosphere, was thought to be one solid piece. The prevailing theory was that the lithosphere is fragmented into 12 to 18 segments called tectonic plates. The best analogy describes the motion as somewhat like parking on concrete in some random fashion then placing the parked pieces back on the average so that the result resembles a spherical jigsaw puzzle.

These segments, of all sizes and shapes, are constantly, continuously in motion because they, along with the earth's continents, float on the partially molten material of the sub-crustal asthenosphere. The Pacific Plate, which encompasses the entire Pacific Ocean, is creeping past the North American Plate in a generally southwesterly direction while that plate may be moving southward. The dividing line between the two is the San Andreas Fault along which California's earthquake occur.

The northwest movement of the Pacific Plate has been estimated to be as much as 6 cm yr<sup>-1</sup>. Similarly, Los Angeles will be where San Francisco is now. An estimated 5 cm yr<sup>-1</sup> equates to 1 km every 20,000 years. So where is everything going?

Somewhere between 50° and 55° N. latitude and running east and west from the International Date-line to the 180th meridian there is an expanse of Pacific Ocean known as the Aleutian Trench. This is where the Pacific Plate and the North American Plate come together in a convergent belt called a subduction zone.

Convergent faults do not butt up against each other as do fracture faults like the San Andreas. The northern rim of the Pacific Plate is subducted beneath the southern rim of the North American Plate. The Pacific Plate is vanishing beneath the North American Continental Plate at rates of 1 to 4 km per half-life of <sup>239</sup>Pu.

There have always been people who recommended the ocean bottom for radioactive waste disposal. What is suggested here is dumping high-level radioactive waste not just anywhere at the ocean bottom but at the bottom of the Pacific Ocean at the Aleutian Trench fault line.

If the Multiple Purpose Canisters (MPCs) that DOE is designing for use at Yucca Mountain (along with high-level waste, were deposited in east-west rows somewhere near the 49th and 50th parallels between the 180th meridian and 175° W. longitude, there would be no need to wait seven half-lives for the decay process to take its course.

1. In something near one half-life (two at the most) the waste would be history. It would disappear forever into the hot chucky soup of the asthenosphere never to be seen again. Not at all events anyway.
2. There would be virtually no environmental impact.

There cannot be anything done there but need not sit.

3. The canisters may have to withstand external pressure: the MPCs would not have to withstand the lateral pressure of water and bottom gas buildup.

4. The thermal loading problem should be eliminated also. It is cold at that ocean depth and you could not get for a better heat sink.

5. Perhaps one day in 10,000 would be lost at sea. As long as the shipping lanes are kept west of the San Andreas and south of the 49th parallel the cargo would eventually arrive at its destination - it would just take longer.

6. If at the bottom of the trench an MPC ruptures or explodes, where can the contents go? There are all kinds of things.

7. And so need to wait for Yucca Mountain or WIPP - the method could be implemented just now. Letting MPCs use the ocean depths should be no different than computing depth charges at enemy submarines. Maybe the containers could be modified depth charge casings.

When you drive over some up mountains. This is the way of the story. Some of the sub-crustal material comes back via volcano eruptions - most of a mass back in the rifts of the oceanic plate structure called divergent faults.

The semi-molten asthenosphere material seeps up into these rifts, cools, solidifies, and is pushed out by mass matter coming up from below. These over-riding rifts cause ocean floor spreading and are the basic mechanism of continental drift and tectonic plate movement.

Since 1912, Alfred Wegener noticed that stitching the ocean and pushing the earth's continents together, with a little adjustment, they fit together in one super-continent. This was later qualified to show that there may have been two super-continents, Lemuria in the north and Gondwanaland in the south centered about the Antarctic Region. Polar wander, the study of the paleomagnetic disturbance drifting of the earth's magnetic poles, leaves little doubt that the land masses were once all joined together and over geologic time have drifted to their present positions.

Because of this constant, relentless diastrophic pressure from the various plates, the flowing continents are forever being wrinkled - by way of a better word. Every time there is a major earthquake in California the Rocky Mountains grow perceptibly taller; what is not so perceptible is that Denver and St. Louis get closer together.

Given this diastrophism, this continuous deformation of the earth's crust, it is not very likely that there is a very stable geological formation anywhere on the planet. So why not take advantage of the instability and deposit all the high-level waste at the earth-diverging mouth of the oceanic garbage disposal at the bottom of the Aleutian Trench?

And, oh yes, the bottom of any oceanic trench is far below anybody's waste table and a subduction zone is not a backyard that anybody really wants.

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Comment Number 1

The process and justification for selection of technologies evaluated in the PEIS are described in a separate Screening Report prepared by DOE. A number of alternatives involving placement of materials below the earth's surface were considered including emplacement in the sub-seabed and injection into the earth's magma. There is little data available to support these options and the retention of Pu in these media is questionable. A major concern would be the environmental impacts of any release of Pu materials following emplacement. Furthermore, the time and cost of developing these technologies would be significant and the outcome uncertain. It is expected that regulatory requirements would be extremely difficult to achieve, particularly if international waters were involved. Therefore, these types of technologies were eliminated from consideration.

ROCKY FLATS CITIZENS ADVISORY BOARD, WESTMINSTER, CO,  
TOM MARSHALL  
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## ROCKY FLATS CITIZENS ADVISORY BOARD

An Advisory Board to the U.S. Department of Energy

May 2, 1996

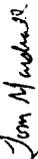
Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, D.C. 20026-3786

Greetings:

Enclosed please find the recommendations prepared by the Rocky Flats Citizens Advisory Board (RFCAB) with respect to the Draft Programmatic Environmental Impact Statement on the Storage and Disposition of Weapons-Usable Fissile Materials.

RFCAB appreciates the opportunity to provide these recommendations and asks that they be considered in preparation of the final document and any Records of Decision that will be forthcoming. We would like to be notified in writing that these comments have been received and the status of their inclusion once that has been determined.

Sincerely,

  
Tom Marshall  
Chair

cc: Mark Silverman, Manager, DOE-RFFO

9035 Wadsworth Parkway Suite 2250 • Westminster, Colorado 80021 • 303-420-7855 • Fax 303-420-7579

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## ROCKY FLATS CITIZENS ADVISORY BOARD

An Advisory Board to the U.S. Department of Energy

### Recommendations on the Draft Programmatic Environmental Impact Statement on the Storage and Disposition of Weapons-Usable Fissile Materials

May 2, 1996

**General:**

- DOE should reduce transport of fissile materials to a minimum, thus protecting the health and safety of workers and the public, and the integrity of the environment along the transportation corridors. 1/10.00.00
- DOE should reduce the current and future risk of nuclear proliferation. Furthermore, the U.S. should promote international inspection of both non-surplus and surplus Pu and HEU, thus implementing U.S. non-proliferation policy in a way that positively involves other countries. 2/01.06.00
- All activities associated with weapons-usable fissile materials should be subject to external, independent regulation, as recommended in December 1995 by DOE's Advisory Committee on External Regulation of Nuclear Safety. Having external regulation should help assure availability of funding. 3/01.06.00
- DOE should provide for full public participation in all decisions regarding the storage and disposition of weapons-usable fissile materials. 4/08.02.00
- Any options that DOE selects should protect the health and safety of the public and the workers, assure the integrity of the environment, and protect future generations. 5/08.03.00

**Any Processing at Rocky Flats Should:**

- Reduce or eliminate the necessity for any future processing or handling at Rocky Flats or at another site. 6/01.00.00
- Make the Pu as proliferation-resistant as possible.
- Put the Pu in a form suitable for disposition.

**Surplus Plutonium:**

- Should be regarded as a proliferation liability. 7/01.06.00

**Storage:**

- All storage options should result in proliferation-resistant material. 8/01.01.00
- DOE should consider other Pu storage containers besides the 50-year can.

9035 Wadsworth Parkway Suite 2250 • Westminster, Colorado 80021 • 303-420-7855 • Fax 303-420-7579

M-128

10 00 00                      **Comment Number 1**

The human health risks of material transportation associated with the proposed Pu storage and disposition alternatives are evaluated and presented in Section 4.4 of the 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 for the public and workers.

01 06 00                      **Comment Number 2**

The United States has taken steps and continues to work domestically, and in Russia, to dismantle weapons, stabilize weapons materials, improve storage capability, and improve materials control and accountability. Storage and disposition actions considered in this PEIS will continue these efforts in the United States for the long-term. DOE is also working on a joint technical working group with the Russians to evaluate, and hopefully expedite, similar efforts there. The United States is promoting and making provisions domestically for IAEA inspections of surplus materials. Efforts are also under way to develop means of verifying classified materials that, because of their shape, cannot be inspected and verified using more conventional means.

01 06 00                      **Comment Number 3**

Comment noted. DOE is still evaluating external regulatory options for its activities.

08 02 00                      **Comment Number 4**

Comment noted. DOE is committed to full public participation in the NEPA process. Public meetings for scoping and receiving public comments on the Draft PEIS were held throughout the United States near the sites potentially affected by the Proposed Actions. Numerous methods of providing public comments were used such as mail, fax, electronic bulletin board, telephone, hand-ins, and transcripts from the public meetings. Further, separate from the NEPA process, DOE made available to the public the results of the technical, cost, schedule, and nonproliferation analyses. DOE also accepted comments on these documents. The results of these analyses and the environmental analysis as well as the public input will be considered in reaching the ROD.

ROCKY FLATS CITIZENS ADVISORY BOARD, WESTMINSTER, CO,  
 TOM MARSHALL  
 PAGE 3 OF 5

**Disposition:**

- DOE should promote and support a national and international dialogue on disposition of surplus fissile materials. To be successful, disposition must be a multi-national effort. | 9/01.06.00
- DOE should release all cost study information for the MOX fuel option in time for public review and comment before release of the final PEIS. | 10/08.00.00
- DOE should further research the deep borehole technology, and focus on environmental, safety, and health uncertainties. | 11/01.00.00
- DOE should analyze other technologies.

**Processing:**

- DOE should reduce processing and handling of fissile materials to the absolute minimum, thus protecting the health and safety of workers and the public, as well as the integrity of the environment at sites where processing, storage, or disposition work occurs. | 12/01.02.00
- Processing should put the Pu in a form suitable for disposition.
- Immobilizing Pu seems the best option for storage, but DOE should further analyze immobilization technologies to ensure proliferation-resistant material. | 13/08.03.01
- DOE should consider vitrification and ceramification as the preferred options, and it should determine their comparative merits for putting Pu in proliferation-resistant, disposition-ready form. | 14/05.01.08
- DOE should develop small-scale vitrification or ceramification pilot plants in as many sites as necessary to prove the technology, so as to determine whether stabilization and immobilization can be accomplished in a single step.

**QUESTIONS REGARDING INFORMATION ON ROCKY FLATS**

1. Table 4.2.7.9-1, note b, on page 4-341 states that the "annual natural background radiation level at RFETS is 353 mrem for the average individual." Since we no longer live in an environment of "natural background radiation level," shouldn't this note refer instead to the "average annual background radiation level" resulting from natural background plus fallout from atmospheric nuclear explosions? Accordingly, the line in the table referring to "percent of natural background" should also be corrected. Finally, the text needs to provide a source for the 353 mrem figure. | 15/09.09.07
2. Table 4.2.7.9-2 on page 4-342 gives numbers for "50-year fatal cancers" in the Rocky Flats workforce. The space for this category under workers "involved" in Pu operations is blank, the space under workers "not involved" is 15. Then the table gives a total for all workers of 16 50-year fatal cancers. How can this be? Is it true that more-exposed workers experience only a single fatality while those less exposed experience 15? | 16/09.09.07

**08 03 00 Comment Number 5**

Comment noted. The results of the environment safety and health analyses included in the PEIS will be considered in reaching the ROD.

**01 00 00 Comment Number 6**

Comment noted. Each of the commentor's points are part of DOE's purpose and need.

**01 06 00 Comment Number 7**

Comment noted. Nonproliferation is an integral part of the purpose and need; in this regard, DOE has prepared a nonproliferation analysis for public comment, which will be considered in reaching the ROD.

**01 01 00 Comment Number 8**

The 50-yr container would meet the criteria for safe storage of Pu metals and oxides. Other existing containers may not meet these stringent criteria, and developing new containers may be costly and require a considerable amount of time. However, this does not preclude the development of new containers. Proliferation resistance will be an integral part of storage decisions. 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.

**01 06 00 Comment Number 9**

The Department of Energy has established a joint technical working group with Russia to evaluate options for disposition of Pu. A report on disposition options evaluated by this group was issued in September 1996. DOE is pursuing joint technical demonstration opportunities with Russia. It is hoped that these activities will help focus and expedite disposition efforts in Russia. DOE has also engaged the other nations of the G-7 to collaboratively address this global issue.

08 00 00                      **Comment Number 10**

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.

01 00 00                      **Comment Number 11**

During fiscal year 1997, DOE plans to continue to expand a range of small-scale tests of Pu disposition technologies to remove any uncertainties in viability. An assessment of the geology and safety of boreholes is being performed. Should the Borehole Alternative be selected to implement the Proposed Action, siting of boreholes would be conducted, and more detailed analyses of the borehole characteristics and environmental impacts would be performed as appropriate. A reasonable range of technologies has been analyzed in detail in the PEIS, and some variants have been noted. The Final PEIS has been expanded to discuss one of these variants (*Can-in-Canister Variants*, Appendix O); further analyses of technology variants will be included in tiered NEPA analyses.

01 02 00                      **Comment Number 12**

The Department of Energy is committed from a health and safety, environmental, and cost standpoint to keeping both material processing and handling at a minimum. Both the Pu conversion and pit-disassembly and conversion processes would prepare the material for the particular disposition technology(ies) selected in the ROD.

**08 03 01**                      **Comment Number 13**

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.

**05 01 08**                      **Comment Number 14**

If the Ceramic Immobilization Alternative is selected in the ROD, maximizing synergy between stabilization and immobilization activities will be an important goal.

**09 09 07**                      **Comment Number 15**

Detailed natural background radiation information was presented in the Chapter 3 of the PEIS. This information includes the sources and values of the natural background radiation. Radiation from the weapons test fallout was also included in Chapter 3. In general, the radiation from the weapons test fallout is only small fraction of natural background radiation (<1 mrem/yr vs. >300 mrem/yr, respectively).

**09 09 07**                      **Comment Number 16**

The noninvolved workers are those workers onsite but not directly involved in the alternatives. Generally, the noninvolved workers comprise most of the total onsite workforce (about 98 percent). The involved workers are those workers who are directly involved in the alternatives (No Action). The fatality difference in this table is the difference of the radiation latent cancer fatalities between the noninvolved workers and the involved workers. There are many more noninvolved workers (about 6,000 in RFETS) than involved workers (about 100 for No Action). The average dose for the involved worker is about twice the average dose of the noninvolved worker.

Rocky Flats Cleanup Commission, Inc.

James S. Stone, P.E., Technical Advisor  
2510 Miller St., Lakewood, CO 80215-1723, V/Fax: (303) 237-8058; FAX@RFCC.DOE.SLR/PA

J. David Nulton, Director, NEPA Compliance & Outreach  
U.S. Department of Energy, Office of Fissile Materials Disposition  
P.O. Box 23786, Washington, D.C. 20026-3786

Re: Public comment on DOE/EIS-0229-D

Thank you for the opportunity to present my comments on the Storage and Disposition of Weapons-Usable Fissile Materials. Please excuse the late reply. I was waiting to review the complete document, which has not yet arrived.

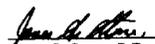
The technical adequacy of the Summary document is excellent; however, there is another alternative that should be considered. A private stakeholder has submitted a conceptual design type Alternative to provide the engineering and a specific site for the storage and disposition of all waste and special nuclear materials from the Rocky Flats Environmental Technology Site. The preliminary evaluation by RFETS is "An advantage this alternative has over other offsite disposal alternatives is the reduced transportation costs and risks." The site graded 87 to 95% in the Geotechnical, Hydrological Environmental, and Economical rating matrix in the DOE Technical Approach Document (050425 Rev. 1, 4/88). See attached Prospectus.

RFCC agrees that the RFETS is not suitable for the stewardship and management of nuclear weapons components and special nuclear materials, including the storage and disposition of weapons-usable fissile materials, that is now stored precariously according to the DFNSB. A more compelling fact for your help is that these materials must be removed at the earliest date, because about two million people in the surrounding metro-Denver area are in eminent danger. The unsafe storage facilities are in close proximity with unstable hazardous and radioactive materials and the simultaneous decontamination - decommissioning operations. Also, the cost of a temporary D&D program to strengthen storage buildings or build new ones, with the current mortgage of about \$2 million/day, would deplete the budget and perpetuate the danger indefinitely.

The Proposed Alternative for a New Offsite Facility near RFETS for the disposition of all waste and the safe interim storage of special nuclear materials is logical, feasible, cost effective, and would incur less risk than any other alternatives evaluated to date. It also provides for near term compliance with requirements of the "Settlement Agreements and Compliance Orders on Consent No. 93-04-23-01", which compels DOE and its contractors to implement the Mixed Residue Reduction Program in a timely and adequate manner.

In conclusion, RFCC requests that DOE include this Alternative in the final EIS to allow implementation of this plan, providing of course that it is also selected as a preferred alternative in the final Accelerated Site Action Plan being evaluated by RFETS.

Thank you for your consideration. Sincerely,

  
James S. Stone, P.E.

Copy to Mark Silverman, Manager, DOE/RFO/RFETS

1/14.00.00

2/08.03.00

1/14.00.00  
cont.

M-178

14 00 00

Comment Number 1

The recommended alternative would not meet the basic goals of the purpose and need described in the PEIS. The described alternative provides only interim storage and would add an additional site to the DOE complex, while one goal is to reduce storage and infrastructure cost. Further, the goal is long-term storage. The described alternative also does not meet the goals for disposition as described by the "Spent Fuel Standard."

Should a decision be made to provide "interim" storage for the RFETS materials, that decision will be coordinated and integrated with the decisions from this PEIS.

08 03 00

Comment Number 2

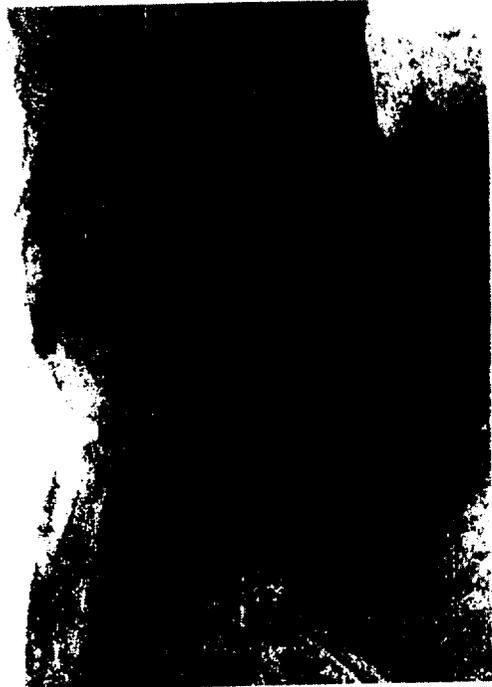
In accordance with existing agreements, DOE is moving toward the removal of all weapons-usable fissile materials from RFETS. This is the reason that all alternatives for long-term storage in the PEIS include the environmental impacts of the removal of the materials from RFETS.

ROCKY FLATS CLEANUP COMMISSION, INC., LAKEWOOD, CO,  
JAMES S. STONE  
PAGE 2 OF 8

Stone Environmental Engineering Services, Inc.  
James S. Stone, P.E., Vice President/Engineering  
2510 Miller St., Lakewood, Colorado 80215-1323, Ph/Fax: 303-2797058, RADW/ASNS/APP, 12/4/95

**ACCELERATED SITE ACTION PROJECT**  
Rocky Flats Environmental Technology Site, Denver, Colorado

PROPOSED NEAR OFF-SITE DISPOSAL/STORAGE FACILITY FOR  
ASAP II SCENARIO I WITH  
MONITORED AND RETRIEVABLE DISPOSAL SITE FOR ALL  
RADIOACTIVE WASTE, SAFE REPOSITORY FOR ALL SPECIAL  
NUCLEAR MATERIALS, AND A RESEARCH FACILITY.



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M-178



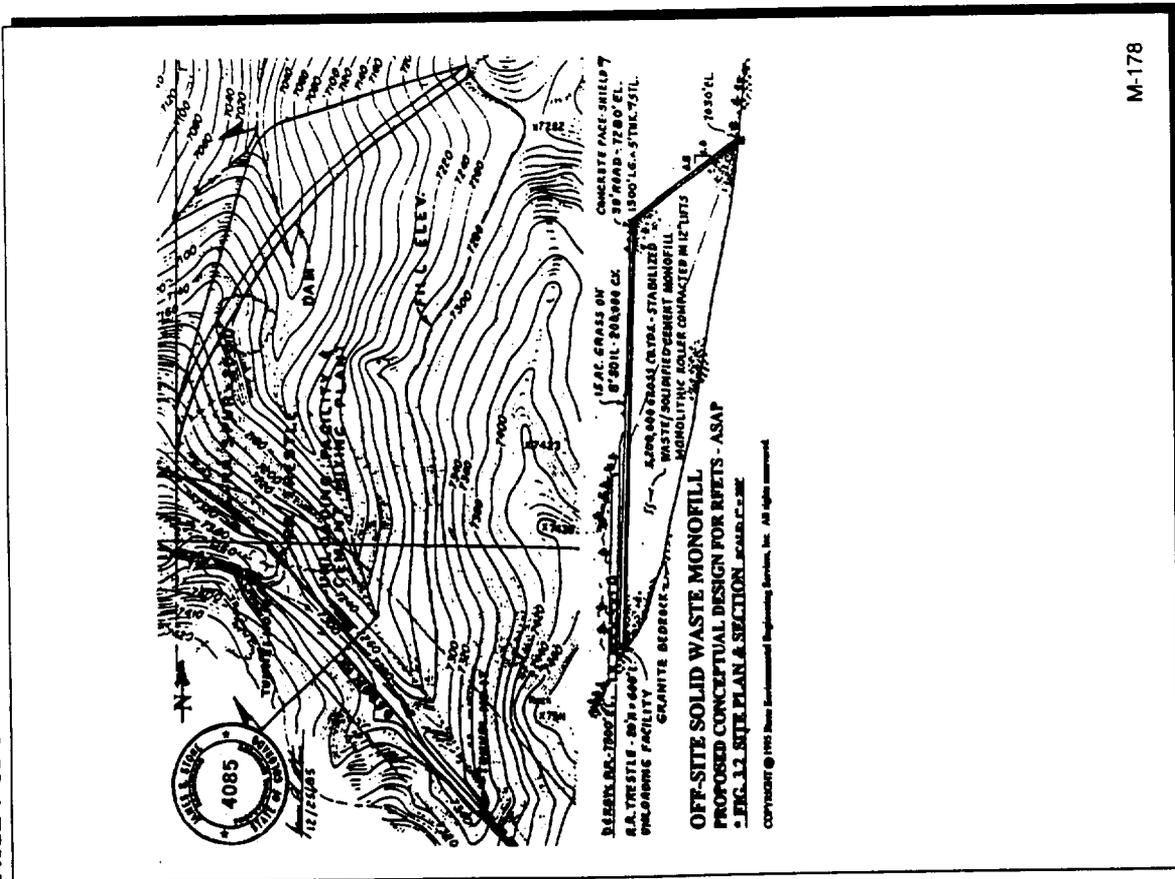
3-817







ROCKY FLATS CLEANUP COMMISSION, INC., LAKEWOOD, CO,  
JAMES S. STONE  
PAGE 7 OF 8



M-178

ROCKY FLATS CLEANUP COMMISSION, INC., LAKEWOOD, CO,  
JAMES S. STONE  
PAGE 8 OF 8



M-178


 United States Department of Energy

NAME (Optional) GORDON J. ROGERS  
 ADDRESS: 1105 N. ROAD 36, PASCO, WA 99301-2744  
 TELEPHONE: (509) 547-7403

*• Safe, prompt disposal of weapon-usable Pu is urgent. Let's get this program moving now! Helping the Russians remedy critical and get started on new power reactor fuel is also urgent.*

*• Storage Options: Hanford could handle any of them; however, I don't believe that co-location and consolidation of all fissile materials at one location is prudent. I favor the upgrade of existing and/or new facilities in best for Hanford. The existing PFP reactor and the FMEF would be excellent choices.*

*• Disposal Options: The Reactor Barn is best. It is minimal idling to fail to use the energy in this reactor. Vitrification is OK for some and other forms not suitable for economic use in MOX fuel. The deep borehole option is means-just repeats the Yucca Mtn. fiasco all over again. Hanford is clearly a top choice for the MOX fuel reactor burn program. The FMEF is available for interim storage and conversion to Pu oxide for MOX fuel. It has had substantial effort in the past for use as a MOX fuel fabrication plant. The WPPSS Plant 2 is ready, willing and able to begin MOX fuel testing. The WPPSS Plant 1 is about 70% complete and could be readily completed for MOX fuel burn. The FFTF could use MOX fuel and produce Tritium and medical radioisotopes. Some LWR fuel fab plant is here. The Hanford site has many advantages.*

1/01.06.00

2/08.03.01

3/08.03.01

4/08.03.01

5/08.03.01

6/08.03.01

3/08.03.01  
cont.

M-173

01 06 00      **Comment Number 1**

Comment noted.

08 03 01      **Comment Number 2**

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.

08 03 01      **Comment Number 3**

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 4**

The Department of Energy acknowledges the commentor's support for Pu disposition in reactors. 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 5**

The Department of Energy acknowledges the commentor's support for the MOX Reactor and Vitrification Alternatives. 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 6**

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.

ROGERS, GORDON J., PASCO, WA  
PAGE 2 OF 2

*Storage/Disposition PEIS*

Page 2

*in existing facilities and infrastructure. This program would take advantage of our skilled worker population.*

3/08.03.01  
cont.

*• This new storage/disposition program must be funded independently of the current Hanford EM program. There will be opportunities to combine certain functions of the disposition program with the EM cleanup program, such as waste treatment of Pu conversion waste streams,*

7/11.00.01

*• The estimated environmental impacts of the several portions of the overall program seem to be very minor for such a major and important activity and are clearly acceptable. Current technology and accumulated experience provide clear evidence that such work can be carried out while avoiding the environmental insults of the cold war era.*

*• I believe the community and region can support the conduct of major portions of this program at Hanford provided it does not unduly delay the current EM program. This program is truly a grand opportunity to close the ~~era~~ circle of the plutonium era started at Hanford. It can work to the benefit to the region, the nation and the world.*

8/11.01.01

*• Thanks for the opportunity to comment.*

M-173

11 00 01

Comment Number 7

Funding for all alternatives under the Fissile Materials Disposition Program will be through the Government budget process. This program will be funded independent of the Environmental Management Program.

11 01 01

Comment Number 8

Comment noted.

P

Date: Tue, 23 Apr 1996 0400

Subject: FORUM Form - incoming

serial\_no = 162

MailTitle = FORUM Form - incoming

name = karen ruddy  
title = Researcher/InformationScientist  
company = Amarillo College  
addr1 =  
addr2 =  
city = Amarillo  
state = Texas  
zip = 79109  
phone = 806 353 0552  
fax =  
email = mkruddy@actx.edu  
ctype = public  
subject =

\*\* The following is the text of the Author's Comment.

All system go! It is important to continue the program for Pantex and  
Amarillo, Tx.  
END comment

| 1/08.03.01

E-003

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.

**RUMSY, RUSS**  
**PAGE 1 OF 1**

Comment ID: P0015  
Date Received: April 18, 1996  
Name: Russ Rumsy  
Address:

## Transcription:

I am totally against any shipments of any waste into Idaho of any kind, and I would like to see the whole INEL out there be dismantled and taken out of the state. I don't believe we need it here, and I am not happy with what's been going on out there for years. Thank you very much.

1/08.03.01

P-015

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.



RYSKAMP, JOHN M., IDAHO FALLS, ID  
PAGE 1 OF 1

**Comment Form**

United States Department of Energy

NAME: (Optional) JOHN M. RYSKAMP

ADDRESS: 189 COMMONS IDAHO FALLS, ID 83401

TELEPHONE: (208) 524-4677

*Keep the plutonium disposition and tritium production missions separate. If the missions were not more focused on facts if they are combined. Furthermore, it is unacceptable to use to produce weapons materials (tritium) in a commercial Light Water Reactor. It is acceptable and appropriate to dispose of weapons grade plutonium in a commercial Light Water Reactor. The general public should never be able to claim that weapons materials (tritium) are being produced in commercial reactor.*

1/11.01.08

ID-006

11 01 08

Comment Number 1

The Department of Energy acknowledges the commentor's suggestion to keep the tritium production mission separate from the Pu disposition mission. The separation of these two missions is the DOE's current position. However, the Multipurpose Reactor Option was preserved as an option for future consideration.

  
United States Department of Energy

NAME: (Optional) JOHN M RYSKAMP  
ADDRESS: 189 COMMONS IDAHO FALLS, ID 83401  
TELEPHONE: (208) 524-4677

*In the PEIS Summary, please define the following  
acronyms: EE, PEL, WAZ, MEI, HI, SW, GW, WW, MYI, etc.  
because they are used in the Table of the Summary.*

*Throughout the Draft PEIS, l is used incorrectly as  
an abbreviation for liters. Please use a small l or  
a capital L to represent liters to avoid confusion and  
follow the official rules of SI units.*

*On Figs S-40, etc., for 2 reactors do I increase the  
value by a factor of 2? Or, is the bar including this  
(the value for 2 reactors)?*

ID-007

16 00 00      **Comment Number 1**

All acronyms used in the Final PEIS Summary are included in the Acronyms and Abbreviations section of the document.

16 00 00      **Comment Number 2**

A lowercase "l" was used as an abbreviation for liters in order to maintain consistency with other DOE EISs currently being prepared. This abbreviation is consistent with the Style Guide used for this document.

09 00 08      **Comment Number 3**

Figures S-39 through S-44 in the Summary of the Draft PEIS reflect the total impacts for each of the Reactor Alternatives. The x-axis key on each of the graphs identifies the number of reactors that were used to determine the total impact. Therefore, the bar charts reflect the impacts for the number of reactors identified.



### Comment Form

These comments apply to the following documents:

- Storage and Disposition Draft PEIS
- Stockpile Stewardship and Management Draft PEIS
- Pentex Site-Wide Draft EIS

United States Department of Energy

---

NAME: (Optional) Eustolne Salinis Jr.

ADDRESS: 55 Larkin #77 Richland WA 99352

TELEPHONE: (509) 947-5224

I wholeheartedly agree w/ proposal as put forth in EIS. Anytime you expand on job base in this document I support EPCRA.

O. C. AW

---

1/08.03.01

WA-003

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 weapons-usable fissile materials will be based on environmental analyses, technical and economic studies, national policy considerations, and public input.

April 9, 1996

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

Re: COMMENTS SUBMITTED ON THE DRAFT FOR STORAGE AND  
DISPOSITION OF FISSILE MATERIALS

Dear Mr. Nulton:

The Department of Energy lists two categories for the disposition of fissile materials: long term storage and plutonium disposition. Alternatives presented to the public from these two categories are undefined and probable to be "hybrids" from many options. Under these circumstances, it is nearly impossible for the public to offer comment on the agency's most probable actions and to foresee consequences of those actions. Public health and safety should be the agency's highest priority in the selection of alternatives for the management of fissile materials. Restoration of public trust would logically follow from such a priority system.

The agency defines "long term" as fifty years. The "no action" alternative would be logically interpreted to mean that the agency intends to leave fissile materials on-site with no actions implemented to protect the public, workers, and the environment from contamination by these materials. This alternative does not appear to be reasonable or have serious merit for agency consideration.

Upgrading of existing facilities should be fully explained to the public. "Partial consolidation" should be clearly defined as to what materials are being consolidated, where potential sites for consolidation have been identified by DOE, in what amounts, and with what future agency intentions. Agency terminology of consolidation with no future intentions "at this time" is not likely to inspire confidence from the public regarding the agency's openness.

The consolidation alternative poses many unsolved technical problems and risks to the public. Transportation of this material to centralized or regionalized sites would contain risks from exposure to workers, communities along transportation routes, commercial carriers, and the "host" communities of the storage facilities. It would appear that the consolidation alternative has inherent potential problems and that reducing risks of "smaller" disasters cannot be reasonably accomplished by consolidation of materials in one or two sites for "larger" disasters.

1/01.04.00

2/08.03.00

3/02.01.08

4/02.00.08

5/09.00.08

M-031

01 04 00

Comment Number 1

The PEIS evaluates two Proposed Actions: long-term storage of weapons-usable fissile materials and the disposition of materials declared surplus to national defense needs. Long-term storage is not a disposition option. Long-term storage has three alternatives analyzed in the PEIS: Upgrade at Multiple Sites, Consolidation of All Pu At a Single Site, and Collocation of Pu With HEU At a Single Site. Disposition has three categories of alternatives: Pu Burning in Reactors, Pu Immobilization in a Glass or Ceramic Form, and Emplacement of Pu in Deep Boreholes. It is possible that a hybrid alternative involving more than one disposition option could be selected in the ROD. It is also possible that the same site could be chosen for storage and some disposition activities. The PEIS (Chapter 4) reflects the cumulative impacts of these activities. Cumulative impacts are also provided in the Summary.

08 03 00

Comment Number 2

The Department of Energy acknowledges the commentor's suggestion regarding the criteria that should be used in determining the Preferred Alternative for the storage and disposition of weapons-usable fissile materials. The criteria, along with other input provided through the public review process, will be presented to the decisionmaker to support the ROD.

02 01 08

Comment Number 3

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, security, health, and safety improvements would continue under the current management direction to ensure that the environment and the people are protected.

**SALISBURY, DIANA, SARDINIA, OH**  
**PAGE 2 OF 6**

2

**PLUTONIUM DISPOSITION:**

Two of the three alternatives presented by the agency for plutonium are immobilization and reactor use. From conversation on or about April 2, 1996 with Cheryl Moss of the Nuclear Energy Institute, the alternative of plutonium used for nuclear reactor fuel is being promoted by some interests as a one time run-through with disposal afterward. Both alternatives postpone, but do not eliminate the problem of that proven technology exists for repository disposal. "Recycling" as a one time run-through for use as nuclear reactor fuel does not eliminate the problem of waste disposal and containment. It merely postpones dealing with the problem.

It would appear to me that asking the public to pay for reactor conversion for a one-time run through to extract energy from this material before disposal is not well considered use of public funds. (THE CINCINNATI ENQUIRER, "PLUTONIUM MAY BE RECYCLED," Saturday, March 30, 1996. Copy enclosed)

6/01.02.00

. . .the civilian nuclear power industry clearly is interested in the material, especially if the government provides it free and pays for reactor conversions. (IBID.)

The third alternative, deep borehole, has no proven merit and no realistic possibility that a site could be selected with public approval. The concept of public approval should be inherently part of the agency's decision in disposition of materials under its management. The agency has offered assistance to local and state governments in its spent nuclear fuel EIS. The agency has suggested that DOE would offer assistance to state and local governments to site necessary facilities, if opposition from the public required assistance, to law enforcement personnel. I would respectfully request that the agency offer assistance to the public to meaningfully participate in the agency's decision-making process rather than offer assistance to site facilities over public objections.

7/08.03.01

The agency has defined "long term" as fifty years. Given the current lack of alternative with likelihood of success for even this time period, the most preferred alternative may well be continued research for a disposal method with probability of containment from the environment.

Consequences of miscalculations and human error in the disposition of fissile materials are irreversible. I respectfully ask the agency to consider the long term

M-031

**02 00 08                      Comment Number 4**

The Final PEIS describes the storage alternatives, with sections explaining the approach for each site including locations and quantities. The intent of the storage alternatives is to provide safe, secure storage of the surplus materials until they can be processed for disposition, or for long-term (up to 50 years) storage of the nonsurplus materials.

**09 00 08                      Comment Number 5**

The risks to workers and the public at DOE sites and communities along transportation routes are considered in the decisionmaking process. Other areas of potential impacts include biological, cultural, air quality, water, and socioeconomics. All were given consideration before the Preferred Alternative was selected and will be considered in reaching the ROD.

**01 02 00                      Comment Number 6**

Comment noted.

**08 03 01                      Comment Number 7**

The Department of Energy has an on-going national dialogue effort to obtain input to its decisionmaking process, cross-cutting various programs, to achieve fully integrated decisions.

The timeframe of 50 years for long-term storage was deemed appropriate when considering the lifecycle of a facility. Anything beyond that period would likely be considered speculative in the NEPA sense. Research and development is both on-going and planned to support disposition alternative(s) if selected, the ROD would include pilot facilities.

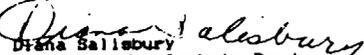
3

implications of its actions in Record of Decision beyond the fifty year time period. Given the present pressures from development interests on the agency for specific actions and funding to for those actions, I request that the agency consider "preferred alternatives" for the protection of the public health and safety. Please see attached letter of March 12, 1996 from Mr. Steven Carter of Ohio Valley Regional Development Commission to the DOE regarding distribution of funding allocated to the agency for site remediation at the Portsmouth Gaseous Diffusion Plant located in Piketon, Ohio. It would appear that public funds for agency projects determined to be necessary for the public health and safety under National Environmental Policy Act are considered potential sources of revenue for the siting of development projects.

The agency is too frequently perceived as a funding source for development interests and quasi-governmental entities. The only long term and consistent interest in agency decision-making process comes from the directly affected public. It is the public that bears the risk, pays the cost, and lives with the long term consequences of agency decisions.

Thank you for any consideration given my comments on this vitally important issue.

Respectfully submitted,

  
Diana Salisbury  
7019 Ashridge Arnheim Road  
Sardinia, Ohio 45171  
(513) 446-3135 telephone and fax

cc: The Honorable Rob Portman

enclosures

7/08.03.01  
cont.

M-031

ATTACHMENT # 3

NATION 1. SALISBURY, MARCH 30, 1996. THE CHICAGO TRIBUNE

## Plutonium may be recycled

Nuclear reactors could use surplus as fuel

BY H. JOSEF HERBERT  
The Associated Press

WASHINGTON — A proposal to turn tons of Cold War plutonium into commercial reactor fuel has caught the interest of U.S. utilities. But critics are worried it could make things easier for terrorists seeking weapons-grade material.

Seventeen U.S. power companies operating 37 nuclear reactors have expressed interest in the idea being considered by the Energy Department, according to participants in documents obtained by The Associated Press.

Energy Secretary Hazel O'Leary is expected by the end of the year to decide on the disposal of more than 42 tons of plutonium left over from old warheads and warhead production.

Among the options being considered is to turn the plutonium into mixed uranium-plutonium fuel for the 109 commercial nuclear power plants with relatively little reactor modification, according to nuclear experts.

Ms. O'Leary has emphasized that the department has yet to decide and also is examining vitrification — a process in which plutonium is encased in glass and then put into storage.

But the city's nuclear power industry is interested in the material, especially if the government provides it free and pays for reactor conversions.

Among the utilities that have expressed interest are Duke Power Co. in North Carolina, Commonwealth Edison Co. in Illinois, Electric Power Co. in Virginia, Power Service Co. and Virginia Power Co., all major operators of nuclear reactors.

Critics of the plutonium mix contend it would go counter to the Clinton administration's overall policy of reducing the risks of nuclear proliferation, and send the wrong signal to the Europeans as well as the Russians.

"The United States will be signaling that plutonium has some value. It would encourage (as a fuel) contrary to administration nonproliferation policies," said Daniel Homer of the private Nuclear Control Institute.

The group urged Ms. O'Leary recently to reject the idea

M-031

**OHIO VALLEY REGIONAL DEVELOPMENT COMMISSION**

*A Regional Partnership Dedicated to the Development of Southern Ohio*

March 12, 1996

U.S. Department of Energy  
Environmental Information Center  
FY'98 Prioritization Comments  
505 West Emmitt Avenue, Suite 3  
Waverly, OH 45690

Dear Sirs:

Thank you for the invitation to attend the February 26, 1996, Public Stakeholders Meeting inviting input into the U.S. Department of Energy's FY'98 Environmental Management Budget for the Portsmouth Site in Piketon, Ohio. Our written comments follow:

- 1) It has been our understanding in listening to public comments from Thomas Grumbly, Assistant Secretary for Environmental Management, during his presentation at the March 1995, DOE Worker Transition/Local Governments Conference in Washington, D.C. that he encouraged local governments and Community ReUse Organizations to request a percentage of DOE Site Environmental Management Budgets for use in Community Transition Planning/Projects. The Ohio Valley Regional Development Commission requests 10% of DOE's Portsmouth Environmental Budget to be utilized for projects prioritized by OVRDC and its Community ReUse Organization, in addition to future requests for 3161 funding through the DOE Office of Worker & Community Transition. It is our expectation to request this percentage of DOE's Portsmouth Environmental Management/Project budget for the forthcoming fiscal year. Local governments have authority and responsibilities under the National Environmental Protection Act to exercise review of federal environmental management programs affecting local jurisdictions, and we plan to assist local governments in this effort.
- 2) It is evident that the FY'98 ADS/RDS Development Process did not solicit stakeholder input during the initial Fall-Winter 1995 development stages of drafting project and environmental clean-up priorities for the Portsmouth and Oak Ridge sites. It is our understanding that stakeholder input will be solicited during these early developmental stages in future planning/budget years, and we offer our assistance in planning such future meetings.
- 3) We have comments regarding the Management Evaluation Matrix (MEM) which was developed to prioritize environmental projects by a ranking and scoring process. It is not evident to the Ohio Valley Regional Development Commission how the category percentages for Public Safety & Health (25%), Site Personnel, Safety & Health (15%); Environmental Protection (15%); Compliance (12%); Mission Impact (15%); Mortgage Reduction (15%); and Social, Cultural, Economic (3%) were arrived at, by whom, and with what rationale? It is our thought that even with personnel safety training procedures in place that the category of Site Personnel, Safety & Health (15%) should have as high a category percentage ranking as Public Safety & Health (25%)

Lawrence

Pike

Ross

Scioto

Vinton

M-031

SALISBURY, DIANA, SARDINIA, OH  
PAGE 6 OF 6

U.S. Department of Energy  
FY'98 Prioritization Comments

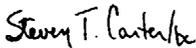
OVRDC  
Page 2

It is also the Commission's opinion that the remaining 50% of percentage rankings should be divided up equally among the other five (5) categories including an increase in the percentage ranking (to at least 10%) given to the category of social, cultural, and economic values. It is also our opinion that where mitigation is possible, that cost factors include appropriate amounts of funds to safeguard or remediate impacted social, cultural, and economic values.

- 4) It is our observation that the entry points for stakeholder input during the Environmental Management Budget Process do not correlate well among the November 15, 1995 "ADS/RDS Development Process" and "ORO - Specific Process" transparencies in the "Environmental Management Risk-based Prioritization Public Presentation," and the "Public Participation in Fiscal Year 1998 Environmental Management Budget" pamphlet.

Thank you for this opportunity to address these requests, concerns, and issues during this public comment period. Overall the proposed DOE budget/project prioritization process is a major improvement in that it does involve local governments, citizens and affected stakeholders in the evolving multi-billion dollar environmental cleanup missions at DOE sites throughout the nation.

Sincerely yours,



Steven T. Carter  
Economic Development Director

cc: Gene Gillespie, Portsmouth DOE Site Office  
Thomas Grumbly, U.S. Department of Energy  
Dan Neff, Governor's Office of Appalachia  
Randy Runyon, Community ReUse Organization Chairman  
Ohio EPA

M-031

**SANFORD & ASSOCIATES**  
1803 Primrose Avenue Nashville, Tennessee 37212

Charles S. Sanford

9 April 1996

H. Mark Blauer, Ph.D.  
Tetra Tech, Inc.  
5203 Leesburg Pike  
Suite 900  
Falls Church, VA 22041

Re.: DOE Oak Ridge Environmental Report (ES/ESH-31/V1, p. 3.6)  
Re.: DOE Draft PEIS Stockpile Stewardship and Management

Dear Mr. Blauer:

At the public meeting in Oak Ridge on April 2nd the public record contains our statements of disagreement. Please accept the enclosure as substantiation of my position that DOE Oak Ridge (Y-12) has "unmonitored" airborne emissions. Your information led you to deny their existence. Please review the referenced enclosure and assist me in correcting the public record. This clarification is necessary in order to disseminate accurate and timely information for public discussion.

The DOE Hanford Engineering Laboratory's HERMES computer model has used a "semi-infinite plume" for calculating dispersion of airborne radioactive hazardous waste. The Hanford GENII computer dispersion model used at DOE Oak Ridge is based on a "semi-infinite plume". Please comment on the calculated mass emission loading for these models as it relates to an annual average theoretical dose versus an actual cumulative dose.

If you can acknowledge that there is a geographical "ridge and valley" preference for plumes with their airborne pollutant loadings, then I believe that we can deduce that biosphere accumulation is along the streams which are within the valleys. Biosphere accumulation of hazardous wastes occurs downwind from the K-25 site along the East Fork Poplar Creek. The plume's decreasing temperature causes air pollution particulates to settle into the East Fork Poplar Creek Drainage Basin. The State Forester (private conversation) has stated that Pine Beetles attack stressed vegetation. Hence, the East Fork Poplar Creek Pine Beetle infestation can be directly linked to waterborne and airborne pollutants. Confirmation of this thesis can be made by atomic absorption analysis of the infested tree stock. Historical comparison can be made by correlating tree ring growth with infrared aerial photographs of the area where a diseased tree canopy cover reflects a different solar wavelength than a healthy one.

1/09.10.08

2/09.03.05

M-209

09 10 08

Comment Number 1

The radionuclide emissions in this PEIS are assumed to be from single or multiple stack releases other than ground mass loading emissions. For stack releases of radioactive material, "semi-infinite plume" models such as GENII are appropriate for estimating radionuclide dispersion in air and subsequent human health effects. Also, the GENII code is widely used in DOE and NRC assessments of radiological human health effects at operating nuclear facilities.

09 03 05

Comment Number 2

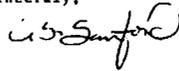
The dispersion characteristics of an air pollutant plume depend on the source characteristics (release height, exit temperature, exit velocity), terrain over which the plume is emitted, the meteorology of the area, and the mixing height. There is no geographical preference for plumes with airborne pollutant loadings independent of the environmental parameters previously delineated.

The commentor's information relative to the conduct of atomic absorption analysis and historical studies of color infrared aerial photography to assess stressed vegetation is noted. Analyses to address possible impacts resulting from existing operations not related to the Proposed Action at ORR are not within the scope of this PEIS.

SANFORD & ASSOCIATES, NASHVILLE, TN,  
CHARLES S. SANFORD  
PAGE 2 OF 4

Since public scoping meetings and comment meetings are inter-related, and since preceding DOE Records of Decision are a precursor to current Programmatic Environmental Impact Statements; then this comment letter should be applicable to not only the current PEIS, but it should also be capable of improving deficiencies in past meetings and past documents. Please forward this letter and your response to: T.S. Tyndell, government information coordinator, Federal Information Exchange (ttyndell@fedix.fie.com); and other relevant program contact personnel. Please believe me to be cordially yours.

Sincerely,



encl.

xc. DOE ORR  
EPA-4  
DOE/OR Site Specific Advisory Board  
Senator Bill Frist  
Senator Fred Thompson  
Congressman Bob Clement

M-209

OAK RIDGE RESERVATION ENVIRONMENTAL  
REPORT FOR 1992

VOLUME 1: NARRATIVE

Project director  
F. C. Kornegay

Project coordinator  
D. C. West

Technical coordinators

L. W. McMahon  
Oak Ridge Y-12 Plant

J. B. Murphy  
Oak Ridge National Laboratory

L. G. Shipe  
Oak Ridge K-25 Site

Coordinating editor  
W. S. Koncinski

Date Published: September 1993

Prepared by  
Environmental, Safety, and Health Compliance  
and  
Environmental Management Staffs  
of the  
Oak Ridge Y-12 Plant, Oak Ridge National Laboratory,  
and Oak Ridge K-25 Site  
managed by  
MARTIN MARIETTA ENERGY SYSTEMS, INC.  
P.O. Box 2008  
Oak Ridge, Tennessee 37831-6285  
for the  
U.S. DEPARTMENT OF ENERGY  
under Contract No. DE-AC05-84OR21400

M-209

1992 Environmental Report Vol. 1, Oak Ridge

Table 3.1. 1992 Y-12 Plant airborne uranium emissions estimates\*

| Source of estimate   | Quantity emitted |              |
|--|------------------|--------------|
|  | (kg)             | (Ci)         |
| Enriched uranium process exhaust (monitors)                | 0.3              | 0.006        |
| Enriched uranium process exhaust (monitors)                | 6.8              | 0.004        |
| Enriched uranium process and laboratory exhaust (monitors) | 0.1              | 0.004        |
| Enriched uranium process and laboratory exhaust (monitors) | 0.2              | 0.011        |
| Enriched uranium room exhaust (monitors)                   | 5.6              | 0.011        |
| Enriched uranium room exhaust (monitors)                   | 5.6              | 0.003        |
| <b>Total</b>   | <b>17.8</b>      | <b>0.040</b> |

\*See Table 2.3 for off-site committed dose equivalents resulting from Y-12 Plant uranium emissions.

3.2.1.3 Discussion

As illustrated in Fig. 3.1, 1992 Y-12 Plant uranium emissions estimates in total were essentially the same as in 1991. This decrease reflects a reduction in Y-12 Plant process activities, continued improvements in administrative controls of the process activities still operating, and improvements in contamination control throughout the Y-12 Plant (seeable in the room exhaust estimates from health physics data). Only five buildings contained areas where uranium concentrations exceeded 10% of the DAC in 1992.

Twenty-eight stacks with the greatest potential to emit significant amounts of uranium are equipped with breakthrough monitors, which alert operations personnel to process upset conditions or to a decline in filtration system efficiencies. The breakthrough monitors have been instrumental in helping to reduce excessive emissions from several enriched process areas over the past few years. When an alarm is received, operations personnel take prompt action to reduce or stop the emission, such as shutting down a

laboratory exhaust from 73 emission points. Two of the sources, Stack 112 and Stack 115, were sampled by impinger-type samplers because of the corrosive conditions in the stacks until the processes were shut down in January 1992. The 71 additional unmonitored process and laboratory exhausts are all categorized as minor emission sources, and estimates were generated according to EPA-approved calculation methods.

Emissions from room ventilation systems are estimated from health physics data on airborne radioactivity concentrations in the work areas. Air monthly concentration averages that exceeded 10% of the derived air concentration (DAC) were included in the annual emission estimate. The DAC is a radionuclide concentration level established by DOE orders. It is designed to protect the health of workers in routine areas. The annual average concentrations are used with the design ventilation rates to arrive at the annual emission estimate. There were 12 ventilation areas from the enriched buildings and 15 ventilation areas from the depleted buildings where the average concentration exceeded 10% of the DAC in 1992.

Radionuclides other than uranium are handled in sufficient quantities as a part of Oak Ridge National Laboratory (ORNL) and Y-12 laboratory activities at facilities in the Y-12 Plant. The releases from these activities are minimal and have a negligible impact on the total Y-12 Plant dose; therefore, only Y-12 Plant uranium discharges are shown in Table 3.1.

3-6 Airborne, Ambient Air, Meteorological, and External Gamma

SAVANNAH RIVER SITE CITIZENS ADVISORY BOARD,  
SAVANNAH, GA, BOB SLAY  
PAGE 1 OF 3

Savannah River Site  
**CITIZENS ADVISORY BOARD**

A U. S. Department of Energy Site-Specific Advisory Board

May 18, 1998

Mr. Gregory Rudy  
U.S. Department of Energy - MD-1  
Office of Hazardous Materials Disposition  
1000 Independence Ave. S.W.  
Washington, D.C. 20546

Dear Mr. Rudy:

Please accept the Savannah River Site Citizens Advisory Board's  
recommendation on the Storage and Disposition of Weapons-Usable  
Hazardous Waste Program's Environmental Impact Statement.

Recommendation No. 29 was adopted on May 14, 1998, in Savannah,  
Ga.

If you have any questions regarding the recommendation, please feel  
free to contact me at the Hazardous Materials Management  
Subcommittee Chair Tom Costigan at (803) 636-2088.

Sincerely,

*Bob Slay*  
Bob Slay  
Chairperson

cc. Mr. Thomas Gentry  
Dr. Mark Frank  
Mr. Dennis Kline  
SRB CAB Members

F-043

SAVANNAH RIVER SITE CITIZENS ADVISORY BOARD,  
SAVANNAH, GA, BOB SLAY  
PAGE 2 OF 3

Savannah River Site

**CITIZENS ADVISORY BOARD**

Recommendation No. 20  
May 14, 1996

- |   |            |
|---|------------|
| <p>1. As all disposition options require decades for implementation, it is essential to first focus on the safe and secure interim storage of the surplus plutonium.</p>  | 1/08.03.00 |
| <p>2. The programmatic environmental impact statement (PEIS) indicates that there are no significant differences in the possible health effects between interim storage options at the various feasible locations. If this is the case, then the choices of locations should be made primarily on the basis of security and cost effectiveness.</p>   | 2/10.00.00 |
| <p>3. Risks associated with the transportation of plutonium are primarily derived from the possibility of highway and/or rail collisions that could injure people, not health effects related to the material. Furthermore, established methods for movement of nuclear materials minimize the likelihood of accidents. This being the case, shipment of plutonium between sites should be acceptable in any alternative that provides the necessary safety, security and cost effectiveness.</p>   | 3/08.03.01 |
| <p>4. We do not believe that deep boreholes should be pursued as a disposition option because:</p> <p>(a) it would face extreme political obstacles,</p> <p>(b) it would be difficult to be certain that a contaminating event originating there could not develop over centuries ahead, and</p> <p>(c) it might preclude the possible future recovery of the plutonium as a fuel.</p>  | 4/06.02.08 |
| <p>5. The choice of a Mixed Oxide (MOX) option for the disposition of weapons plutonium should include the consideration of using commercial reactors if it is a cost effective measure.</p>  | 5/01.04.00 |
| <p>6. The PEIS accepts without question the Spent Fuel Standard as the desired end result for both the vitrification and reactor options. However, it is questionable whether this is an entirely appropriate objective in making a long term disposition decision. As the overriding outcome of the program must be the minimization of risk that plutonium is diverted for weapons use, options that actually dispose of the material should be sought. The necessity of the Spent Fuel Standard can be questioned because of the following considerations:</p> |            |

SRF CAB Recommendation #20  
Approved May 14, 1996

F-043

08 03 00                      **Comment Number 1**

Comment noted.

10 00 00                      **Comment Number 2**

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.

08 03 01                      **Comment Number 3**

The Department of Energy recognizes the commentator'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.

06 02 08                      **Comment Number 4**

This alternative is addressed in the PEIS.

01 04 00                      **Comment Number 5**

The Department of Energy, 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 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 making 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. The NAS also adopted the Spent Fuel Standard as the most acceptable form for conversion of weapon Pu.

Recommendation No. 20 continued

- With both western Europe and former Soviet states being committed to the full recovery of plutonium's energy value, the benefit of the United States, a declared nuclear weapons power, setting an example against this is, at best, uncertain.
- In the United States, security for and transparency of the country's interim management of its surplus plutonium from all sources should be achievable through a guarded repository combined with International Atomic Energy Agency (IAEA) safeguards.
- Because the Spent Fuel Standard depends on relatively short lived fission products being mixed with the very long lived plutonium, there may be significant environmental, security and safety questions with a long term geologic repository.

Therefore, any plutonium disposition plan should include exploring various options that go beyond the spent fuel standard and that actually reduce plutonium stocks. These would include reactor concepts that burn relatively high fractions of plutonium as well as ones that do not generate plutonium. The options presented in the PEIS have the advantage of established technology and, perhaps, economic advantages in the near term.

However, these other options, which are not tied to the Spent Fuel Standard and which consume plutonium, should be evaluated because of:

- The very possible long term benefits of superior waste management.
  - The environmental and supply uncertainties of fossil fuels.
  - The advantage of maintaining/enhancing the country's technology in an area of potentially great future importance.
7. If the evaluation process concludes that SRS is a preferred site for a plutonium storage and disposition program that is secure, safe, and cost effective, the SRS CAB supports and welcomes such a decision.

5/01.04.00  
cont.

6/08.03.01

F-043

08 03 01

Comment Number 6

The Department of Energy acknowledges the commentator'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.

SCOTT, RICHARD G., AMARILLO, TX  
PAGE 1 OF 1

Comment ID: P0032  
Date Received: May 1, 1996  
Name: Richard G. Scott  
Address: 4305 Emil Street  
Amarillo, TX

Transcription:

I am against the storage of plutonium or any type of storage of nuclear materials at the Pantex Plant in Amarillo. The Amarillo Chamber of Commerce does not speak for all of us. I am a World War II veteran and retired and have lived in Amarillo for 25 years. This is to let you know that a lot of the people in the city and in the area are not for any storage of nuclear materials at the Pantex Plant. Thank you.

1/08.03.01

P-032

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.

SEATTLE WOMEN ACT FOR PEACE/WOMEN STRIKE FOR PEACE,  
SEATTLE, WA  
PAGE 1 OF 4



SEATTLE WOMEN ACT FOR PEACE  
WOMEN STRIKE FOR PEACE

SEATTLE WOMEN ACT FOR PEACE / WOMEN STRIKE FOR PEACE  
14 CENTRE DU LA RAZA 2524 16TH SOUTH SEATTLE WA 98144  
(206) 379-0666 FAX (206) 375-3183 E-MAIL: ACK@LSP@U.WASHINGTON.EDU

Plutonium Disposition PEIS Issues and Comments

**Background**

The U.S. Dept. of Energy (DOE) is conducting a Programmatic Environmental Impact Statement (PEIS) to determine what to do with "surplus" plutonium taken from dismantled weapons (*Storage and Disposition of Weapons-Usable Fissile Materials, Programmatic Environmental Impact Statement*). DOE is considering alternatives for the storage (storage alternatives are not addressed here) and disposition of plutonium, and has agreed to take comments and discuss this PEIS at the Plutonium Roundtable in Seattle on April 30. Further comments can be addressed to the DOE until May 7.

The good news is that plutonium is being removed from weapons - the process of disarmament has begun. The bad news is that keeping plutonium out of weapons and the environment is a formidable task. If we are going to meet our obligations under the Nuclear Nonproliferation Treaty to work toward disarmament, the plutonium stockpile from dismantled weapons will grow, so we must analyze how to effectively deal with plutonium. Unfortunately, this PEIS so far is an inadequate analysis that does not facilitate informed public participation and openness principles. DOE is also considering alternatives that exacerbate plutonium disposition problems. It is very important that everyone concerned about nuclear proliferation, Hanford, or the environment, participate in this process.

**The Problems With MOX**

The use of plutonium in nuclear reactors is one of the disposition alternatives considered in the PEIS. First the plutonium would be blended into mixed plutonium dioxide, and uranium dioxide, or MOX and then reactors could use the MOX to generate electricity. This alternative is strongly opposed by many people concerned with nuclear weapons and/or proliferation.

Plutonium in MOX can still be diverted into nuclear weapons. The International Atomic Energy Association (IAEA) considers MOX to be of "direct use" in nuclear weapons. This means that in the storage and transport and use in reactors, MOX must be secured and handled as weapons material.

Using MOX in reactors is against stated U.S. Nonproliferation policy. President Clinton has 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." (Sept. 1993) Developing MOX would drastically alter this policy, and encourage other countries to further develop plutonium use in reactors.

affiliated with

WOMEN STRIKE FOR PEACE  
NORTHSHAW SQUARE 5 FIVE LETTERS  
110 WASHINGTON AVE N.E. RM 19  
SEATTLE, WA 98101

M-221

01 06 00      **Comment Number 1**

Comment noted.

08 02 00      **Comment Number 2**

The Department held eight public meetings to present the information contained in the Draft PEIS and to receive public comments. These meetings were advertised in a variety of ways to encourage full public participation. All comments submitted received equal consideration.

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.

13 00 00      **Comment Number 4**

While the Pu is in the MOX fuel form, it is owned by the U.S. Government and would be subject to high standards of safeguards and security. The utilization of MOX fuel for Pu disposition is consistent with the President's Nonproliferation Policy. The surplus Pu in this form would be inspectable by IAEA, as appropriate.

SEATTLE WOMEN ACT FOR PEACE/WOMEN STRIKE FOR PEACE,  
SEATTLE, WA  
PAGE 2 OF 4

The U.S. has no facility to develop a MOX fuel that could be run in a commercial reactor. A MOX fabrication facility would have to be built, or a current facility adapted. This could be done at Hanford at a cost as yet undisclosed. Potentially plutonium from around the country would be brought to a Hanford MOX fabrication facility.

6/06.01.01

Also, because there is currently no U.S. MOX fabrication facility, the PEIS assumes that if an existing light water reactor in the U.S. were to use MOX fuel, a "timely supply" of MOX fuel would have to be sought while an U.S. fabrication facility is developed. This means DOE would send U.S. plutonium to Europe where MOX fuel would be developed and then sent back to the U.S. reactors (PEIS Summary pp. 15, 32).

7/06.01.08

MOX in commercial reactors is a concern. Because MOX is a direct use weapons grade fuel, its use in commercial reactors would turn many utility nuclear energy plants into de facto weapons facilities. Increased security to prevent diversion of plutonium would be required.

4/13.00.00  
cont.

High Level Waste generated from MOX is likely to be a serious problem. Commercial Spent Fuel generated from MOX reactors is supposed to go to a waste repository. The Development of a repository has been fraught with difficulty. There is no guarantee that a suitable repository will exist for even more high level waste generated from MOX reactors. Simply stating that it will go to a repository, which does not yet exist, is not good enough. Hanford, as well as other sites in the nuclear weapons complex may end up with this waste if a repository is not available.

8/12.00.00

One alternative in the PEIS is to use Canadian CANDU reactors. According to the PEIS, Canada would then be responsible for the waste generated from the reactors. This encourages international commerce in plutonium (as does any alternative calling for plutonium or MOX shipment to and from Europe.) It may also set a dangerous precedent for the U.S. to give up control of weapons material to other countries, and it brings up a question of fairness: Why should Canadian citizens take plutonium, and waste that they did not develop?

9/01.03.00

Instead of MOX, plutonium should be declared a waste and immobilization alternatives developed.

We should declare plutonium a waste and ensure that it is not used in weapons, or in reactors. By doing this in the U.S., we can also take a leadership role in preventing an international industry and commerce in plutonium that would be increasingly difficult to control.

10/01.04.00

11/01.06.00

Immobilization technologies should be vigorously pursued because these technologies provide the greatest ability to isolate plutonium from the environment, and prevent proliferation of weapons material. Immobilization technologies should be developed shared and with other countries. Meanwhile, storage of plutonium should maintain plutonium so as to prevent harm to the environment and diversion into weapons. This means that risks involved in transport should be avoided.

12/08.03.01

Public Participation and Openness in the PEIS Process

This PEIS lacks credibility because DOE has not furthered informed public participation in the process, or adhered to basic principles of openness.

2/08.02.00  
cont.

M-221

01 06 00

Comment Number 5

The President's Nonproliferation Policy states 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.

Decisions on disposition of weapons-usable fissile materials will be made based on environmental analyses, technical and economic studies, national policy considerations, and public input.

06 01 01

Comment Number 6

Comment noted. Hanford, along with other sites, is included as a "representative site" in DOE's consideration for analyzing a MOX fuel fabrication facility.

06 01 08

Comment Number 7

Comment noted.

12 00 00

Comment Number 8

The Department of Energy's recently released *Program Plan for the Civilian Radioactive Waste Management Plan* continues to maintain a year 2010 startup date for the NWP-HLW repository. In the interim, the Fissile Materials Disposition Program has established that each alternative be evaluated assuming the entire inventory of material forms can be stored onsite until an NWP-HLW repository is available.

01 03 00

Comment Number 9

Should the CANDU Reactor Alternative be selected with the ROD, agreement from the Canadian Federal and Provincial Government must be obtained, and a Canadian environmental assessment with public involvement must take place prior to implementation of this alternative.

**SEATTLE WOMEN ACT FOR PEACE/WOMEN STRIKE FOR PEACE,  
SEATTLE, WA  
PAGE 3 OF 4**

*DOE secretly solicited the nuclear industry in pursuit of MOX. In December, 1995, DOE included in a Request For Expressions of Interest for Tritium Production, a solicitation in pursuit of commercial reactors that would like to use MOX. This action, taken between the Plutonium Disposition PEIS Scoping Hearings and the draft PEIS, was done without notice to the public or incorporation into the PEIS. Not until March 29, 1996 were Expressions of Interest (EOI) released. This solicitation indicates a substantial furtherance of MOX despite the fact that DOE has not chosen a preferred alternative. No EOI process has been followed for any of the other disposition alternatives. Among EOI responses from utilities interested in MOX was one from the Washington Public Power Supply System (WPPSS) in use MOX at the WNP 2 reactor sited at Hanford.*

13/08.00.00

*DOE is not including cost studies and nonproliferation studies for public scrutiny along with the PEIS. Cost studies and nonproliferation studies are going on outside of this PEIS process. Since these studies will effect the outcome of the PEIS, they must be made publicly available so that citizens can make informed comments on the PEIS. Given that the need for action on plutonium disposition is based upon proliferation concerns (PEIS Summary, S-1 to S-4, and PEIS pp 1-4 to 1-6), there is an appalling lack of consideration of proliferation impacts throughout this PEIS. Also, full cost analysis of MOX, including cleanup costs of a MOX fabrication facility, and MOX reactor sites, and the costs of a suitable repository, should be done and available for public comment, as should cost estimates for all other alternatives.*

14/08.00.00

15/01.06.00

14/08.00.00  
cont.

*DOE should extend the comment period and hold hearings in additional locations. Additional time is needed for the public to fully consider the PEIS, especially with additional cost and nonproliferation information. Hearings ought to be held in additional locations. For example actions at Hanford should require hearings throughout the Northwest (Seattle, Portland, Spokane etc.) Now that some of the potential reactor sites for MOX are known, hearings in those areas should be considered.*

16/08.01.00

M-221

**01 04 00                      Comment Number 10**

Comment noted. In accordance with NEPA, the PEIS evaluates a range of reasonable alternatives for the disposition of surplus Pu. The disposition of Pu in reactors using MOX fuel is considered a reasonable alternative and is, therefore, analyzed in the PEIS.

**01 06 00                      Comment Number 11**

Comment noted.

**08 03 01                      Comment Number 12**

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 13**

The Preferred Alternative for Pu disposition as stated in the Final PEIS, includes Reactor Alternatives. 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.

**08 00 00                      Comment Number 14**

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 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.

01 06 00

## Comment Number 15

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 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. 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.

08 01 00

## Comment Number 16

At the request of several organizations and individuals, the public comment period was extended to a total of 92 days. DOE held public meetings for scoping of the PEIS, as well as to provide information and to receive comments on the Draft PEIS as part of the NEPA process. Also, there were separate meetings to present DOE analyses of the nonproliferation aspects of the storage and disposition alternatives. Each of these sets of meetings were advertised in a variety of ways to encourage full public participation. DOE was also invited to participate in meetings held by local groups concerning the management of weapons-usable fissile materials in Seattle and Portland.

PANTEX WORKSHOPS April 22, 1996  
Statement by William H. Seewald

Given the time allotted and the amount of information to be covered in these "workshops," remarks will have to be brief and abridged. However, notwithstanding the voluminous issues of great concern, some reference must be made to the process. Combining these three documents into a single opportunity for public input together with the very short amount of time much of the material has been available does justice neither to the NEPA process itself, nor to the people and agencies that wish to make reasoned responses to these documents. At least in the case of the Stockpile Stewardship as well as the Storage and Disposition, the documents are substantive enough to require careful analysis. It is also an unavoidable conclusion that the hearing process envisioned by NEPA has been transformed by DOE into a format they feel they can more effectively control — that being the workshops. There is nothing wrong with workshops per se, but they do not meet the government's full responsibility to the public. That any of us at all are standing here to give testimony is only the result of citizen lobbying and the willingness of individuals to face down any obstacles to get their concerns into the public record.

One overriding point must be made regarding the Stockpile Stewardship and Management document even though one also must look at the cumulative impact of all three. It is clear that one of the significant premises compelling much of the decision-making process is the extraordinary attempt by the government to justify the continued operation of all three of the major DOE weapons laboratories, Los Alamos, Sandia, and Lawrence Livermore. The redundant laboratory capacity built during the cold war to spur competition can now only be characterized as an obscene abuse of the tax-payers pocketbook. That such a political decision gets made in Washington is certainly no surprise, but it is incumbent on all of us to demand accountability in these decisions, to refuse to acquiesce in expedient political decisions as well as those that are based on bad science or a disregard for the natural resources of the Panhandle.

The Storage and Disposition document with its potentially momentous effect on our area is tragically flawed in three important areas. Number one, it doesn't really live up to the second part of its title. If long-term storage decisions are to be made, it seems absolutely essential that they be informed by a least a fairly concrete sense of the method of disposal as well as where that will happen, the time frame, and a reasonable consideration of the processes themselves. Secondly, this EIS, as with the others under consideration today, does not make a realistic distinction between strategic and surplus plutonium. The effort to maintain two thirds of all the plutonium ever produced in the U.S. as "strategic" evidences a less than serious commitment to disarmament as well as giving rise to the suspicion that some effort to generate commerce in plutonium is superseding the security need to immobilize this dangerous substance. Thirdly, this

1/08.01.00

2/01.02.00

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4/01.06.00

5/09.00.04

TX-055

08 01 00

**Comment Number 1**

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 impacts 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.

01 02 00

**Comment Number 2**

It is true that the long-term storage decision is related to the decision on disposition, especially with regard to timing which will impact the storage capacity required, and siting which should reflect the experience base and existing infrastructure at a particular location. DOE is confident that a decision can be made on disposition technology(ies) at the ROD, based on available data and environmental, technical, cost, schedule, and nonproliferation assessments completed to date. DOE is conducting small-scale tests and demonstrations of some Pu disposition technologies to remove uncertainties in their viability.

01 00 00

**Comment Number 3**

As defined in Chapter 1 (Figure 1.4-1) and in the Summary (Figure S-1) of the Draft PEIS, Pu in the strategic reserve is not surplus.

01 06 00

**Comment Number 4**

Comment noted. The amount of Pu determined to be "strategic" is beyond the scope of this PEIS. The Secretary's February 1996 Openness Initiative announced the amount of surplus Pu which supported the basis for the quantity analyzed in this PEIS.

09 00 04

**Comment Number 5**

Comment noted.

SEEWALD, WILLIAM H.  
PAGE 2 OF 2

document sets out options that would obligate plutonium processing, generating all kinds of new nuclear waste streams that have never existed at Pantex before. The document gives little or no consideration to the effects on Panhandle agriculture. Just the threat of contamination from these activities could devastate the marketability of our products. It furthermore remains unconscionable that apparently considerations other than the water needs of domestic and agricultural usage seem to preclude the realistic designation of the Ogallala as an aquifer eligible for the fullest protection of federal law and policy.

5/09.00.04  
cont.

The Site-Wide EIS, an effort brought about by citizen lobbying of the Department of Energy, has not really been in the public domain long enough for a detailed consideration. Unfortunately, the substance of the document itself may require much less time than the gravity of the issues warrants. There is again no consideration of the most basic industry of the Panhandle, agriculture. The agreement to evaluate alternative storage sites for pits, specifically Department of Defense sites seems to have been an insubstantial one since that site is not included in the actual storage EIS. If, as implied in the analysis, Manzano mountain becomes ineligible because of the threat such a facility represents to Albuquerque, what are we to make of the government's concern for the residents of the Panhandle?

Sad to say we hear more about jobs than grave issues relative to safety and the protection of natural resources. But the best way absolutely to protect jobs in the Panhandle, whether in agriculture or at the Pantex Plant itself, is to keep the plant from becoming the next Rocky Flats. When that happens the only jobs will be for nuclear waste handlers and the state regulators who can only step in after the damage is actually done but who have no federally mandated authority over many of the processing functions being proposed. On top of the Ogallala Aquifer is the wrong place for long-term storage of plutonium, nuclear waste facilities, or any kind of plutonium processing.

6/09.04.08

TX-055

09 04 08

Comment Number 6

Potential impacts to groundwater quality are considered to be minimal at all facilities due to hazardous materials/waste handling and treatment/disposal Federal and State requirements.

2237 Peachtree Street  
Amarillo, TX 79109  
May 7, 1996

U. S. Department of Energy—Office of Fissile Materials Disposition  
c/o SAIC-PEIS (S+D PEIS)  
P. O. Box 23786  
Washington, D. C. 20026-3786  
FAX 800-820-5156

Dear U. S. Department of Energy  
Office of Fissile Materials Disposition:

Thank you for the opportunity provided to the public to comment upon the draft Storage and Disposition Programmatic Environmental Impact Statement for Weapons-Usable Fissile Materials. I understand that I may also comment on the Panhandle Statewide Environmental Impact Statement. I would like to say that I have found it difficult to prepare comments based on the draft Documents, because I find them to be inconclusive in terms of what is being proposed for the Texas Panhandle, and I believe that others share this concern. Possibilities for Storage and Disposition are presented, but, partly because of unknown factors in safe storage and disposition of nuclear waste, high level or other, it seems that the PEIS is inconclusive. Perhaps the best proposal in such circumstances is to seek a safe storage program while furthering research for Pu and HEU at the sites where they are currently stored. This could result in an economy of funds in the long run.

I realize that an effort is being made to ensure the best results regarding the storage and disposition of high-level nuclear materials; however, if the best conclusions are not able to be reached at this time, further work may be necessary to insure the safety and security of our environment. Panhandle residents acknowledge the Ogallala Aquifer as the largest and most significant fresh-water resource in The United States. Isn't this very important as a factor in this study? The use of land for agriculture is prime in The United States: one in four Panhandle residents is employed in Texas agriculture. The Government could be aware that these are significant elements to be considered in a serious study such as this. Panhandle residents are also bottom-line aware of this, speaking on the issue or not. Our newspaper reflects upon agricultural concerns every day; if a problem is understood, there will be a public response in probability. The potential problem, as I understand it, lies in fully evaluating the environmental impact of storing more plutonium here, or working with it here in any way that will promote more active waste, dangerous to our soil and water. There is an airport here, accepting international flight connections. Our area residents are proud of the Panhandle with good reason: We have been and are patriotic citizens.

There is reason for the Department of Energy to take every effort to sort out possible alternatives for safe and reasonable storage of weapons materials without creating problems at sites where clean-up work can now be managed (as we hope to presume is possible at this time at Pantex). Finding the best disposition for nuclear material should be accomplished before many more steps are taken; this would be a responsible thing to do before more decisions are made. It may be the long-term best decision to plan Storage and Disposition before moving more nuclear materials to this site, both in economic good sense and environmental sense.

Thank you for receiving these comments,

*Mary L. Shennum*

F-031

01 04 00

Comment Number 1

One of the screening criteria used for selection of reasonable alternatives to be analyzed in the PEIS is technical feasibility. To the extent possible, DOE will use existing and proven technologies for construction and operation of the storage and disposition facilities in the Proposed Action. Should new technologies be chosen for Pu disposition, DOE will demonstrate them prior to implementation.

09 00 04

Comment Number 2

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), 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.

1/01.04.00

2/09.00.04

1/01.04.00  
cont.

SHILLINGLAW, FAUN, APPLETON, WI  
PAGE 1 OF 1

June 7, 1986  
1952 Palisades Dr  
Appleton, WI 54915

U.S. DOE

Office of Fissile Materials Disposition:

I would like to comment on the PEIS - Department  
Examined by the State on Storage and Disposition  
of Weapons Usable and Fissile Materials which I  
understand a local Wis. Utility - Wis. Public Service  
at Kewaunee is interested in. I strongly oppose this  
unregulated proposal. MOX use has proliferation  
problems and increases waste volume and  
radioactivity. Vitrification is the only prudent  
measure for public safety. You have created  
a waste problem. Don't put it at local plants  
in our back yards. We already have enough  
problems with casks of spent fuel having  
to be placed at our nearby Ft. Belknap plant  
the past week. These dangerous materials need  
great maintenance and careful handling. We  
certainly don't want MOX fuel in Wisconsin  
or any more nuclear waste creation. Please  
put the waste in a form nobody can use for  
weapons as soon as you can, and don't  
consider the MOX option. People in Wisconsin  
are very concerned about nuclear waste  
issues and MOX fuel will only add to  
the problems we already are dealing with now.

Thank you,

Faun Shillinglaw

1/08.03.01

2/08.03.01

1/08.03.01  
cont.

2/08.03.01  
cont.

M-272

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.

SIERRA CLUB NATIONAL NUCLEAR WASTE TASK FORCE,  
TALLAHASSEE, FL, ELLEN WINCHESTER  
PAGE 1 OF 2

Ellen Winchester, Editor  
Nuclear Waste Briefs, Sierra Club  
2405 Delgado Drive  
Tallahassee, FL 32304  
May 3, 1998

Mr. J. David Nulton  
Director, NEPA Compliance & Outreach  
Office of Materials Disposition  
Department of Energy  
Washington, DC 20585

Dear Mr. Nulton:

The Storage and Disposition of Weapons-Usable Fissile Materials Draft PEIS, as summarized, raises more questions than it answers. Because the discussion of alternatives is very repetitive, my comments concern general considerations that apply to several alternatives.

First, the PEIS does not sufficiently satisfy the question of safe isolation of fissile materials, both those in the inventory and those produced by the processing of fissile materials for long term storage (defined as fifty years). Instead, it indicates that for each of the options considered, "the annual radiological dose to onsite workers would be within radiological limits, and the dose to the population living within 80 km (50 mi) of the site would be within 100 person-rem per year." The unstated implication is that a population dose of within 100 person-rem per year (person-rem is the average dose to a person multiplied by the number of persons exposed) is a harmless dose.

In contrast, the widely accepted BEIR Report of the National Academy of Sciences concluded that there is no threshold radiological dose. Thus even a very small dose to an individual could cause some irreversible damage. If the population size in an area within an 80 km radius happened to be small, a 100 person-rem per year population dose could allow a great deal more for individuals than our 100-200 millirem annual background dose (or the 360 millirem NRC has calculated as our average background dose). The PEIS seems to be saying that it is no worse to zap most individuals in a small population with a high dose, possibly lethal, than to spread the dose thinly in a large population.

Secondly, with regard to the dependence on MOX for waste vitrification and Pu burn-up, this question arises: is the PEIS assuming a relaxation of US opposition to reprocessing? If so, this is a major shift in our no-reprocessing policy endorsed by every President from Ford to Clinton. Reprocessing has not been practiced by DOE since 1992, primarily because it would encourage world trade in Pu among countries depending on MOX and make nuclear proliferation more difficult to control. Why therefore does this PEIS operate on the premises that 1) burning mixed oxide fuel in reactors is an acceptable way to reduce stocks of plutonium or 2) that reprocessing is acceptable as a step towards providing the Pu content of spent fuel with greater stability through vitrification? If US power reactors burned MOX, our example for the rest of the world would be particularly poor.

We acknowledge that, should the US prohibition against reprocessing be lifted, an action the Sierra Club National Nuclear Waste Task Force would deplore, burning MOX would meet the spent fuel standard, but how would DOE handle the resultant spent fuel? Is it DOE's expectation that it would be stored "as is" in a permanent repository? If so, that is a questionable option. After several decades of work on geologic isolation no permanent repository has been licensed, and there is no certainty that within fifty years repositories with a capacity to store all of the nation's high level waste and spent fuel, including commercial spent fuel, will be built and licensed.

1/09.09.08

2/01.06.00

3/01.04.00

M-214

09 09 08

Comment Number 1

The health impacts from proposed Pu storage and disposition facilities during normal operation and potential accidents are analyzed and presented in the Final PEIS. The results include the radiation dose and latent cancer risk for the MEI, population within 80 km (50 mi), and the involved workers and their applicable radiation limit. The radiation doses are regulated by individual dose; not collective population dose. Proposed 10 CFR part 834 (see 58 FR 16268) would require an ALARA program and would generally limit the potential annual population dose to 100 person-rem/yr from all pathways combined for DOE activities. This requirement does not imply that the radiation dose for the MEI could exceed the respective regulatory limit. Actually, this is an additional radiation limit to the exposed public.

01 06 00

Comment Number 2

Burning weapons Pu in reactors does not utilize the recycling process because the Pu in the spent fuel from this disposition action will not be extracted for reuse in new fuel. The Reactor Option will utilize a once-through fuel cycle. Spent fuel will be disposed of with other commercial reactor spent fuel. This is consistent with U.S. policy since no Pu is being recycled. 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 during the MOX fuel fabrication process and at the reactors would be provided.

01 04 00

Comment Number 3

The spent fuel produced from burning MOX fuel in reactors would be essentially the same as spent fuel currently produced by commercial reactors. This spent fuel would eventually go to a permanent geologic repository as in the case of commercial spent fuel. Although it is true that no permanent repository has yet been licensed, this option would displace spent fuel that would have otherwise been created by commercial reactors.

Comment Documents  
and Responses

SIERRA CLUB NATIONAL NUCLEAR WASTE TASK FORCE,  
TALLAHASSEE, FL, ELLEN WINCHESTER  
PAGE 2 OF 2

If, on the other hand, the MOX spent fuel is reprocessed in a lengthy recycling effort to harvest and burn the remaining Pu, the problem of storing the resulting high level wastes will still remain. These problems of safe storage and handling of MOX wastes, whether the spent fuel is stored as is or will be reprocessed before storage, are not clearly addressed in this PEIS. The omission is serious. We should remember that spent fuel is rich in hard to handle radioactive isotopes of transuranic elements, especially americium and curium, much richer than its unburnt components. Moreover, reprocessing produces a greater volume of highly radioactive wastes than the spent fuel reprocessed.

A member of the public has to sympathize with employees of DOE as they struggle to find ways to isolate fissile materials. Not the least difficult problem is guarding against criticality incidents, or even large scale disasters. These seem to be especially severe with regard to 1) the highly radioactive liquids produced by reprocessing, and 2) vitrification processes in which PuO<sub>2</sub>, by not dissolving completely, may clump enough to cause criticality. Nevertheless, the statement that "MOX fuel fabrication (but not reactor burning) at European facilities remains a reasonable short-term option . . ." sounds like an unacceptable effort to make an end run around difficulties and dangers (and possible environmental regulations) that should not be exported.

On the whole, the problems involved in reducing criticality risks seem equally hazardous, whether DOE opts (1) to vitrify Pu which, aside from stockpiles, would first require reprocessing to separate it from spent fuel (producing large volumes of highly radioactive liquid waste that must be perpetually kept cool) or (2) to carry out repeated cycles of burning and reprocessing MOX to reduce Pu stockpiles—but increasing the accumulation of HLW.

It may be that such hazards are reduced in vitrifying the immense amount of already processed Pu on hand in the PANTEX plant and Rocky Flats, which could presumably be fabricated into MOX. However, since the overall burnup of Pu in MOX is a slow process (because when Pu is loaded as fuel and consumed, some is also created by neutron capture by the U-238 in the mix), and more high level waste is being produced, burning the stockpiled Pu does not appear to be the perfect way to relieve the US of its embarrassment of Pu riches. As for vitrification, it may be as difficult to find long term storage sites for the vitrified but still highly radioactive Pu as it is for the unvitrified stockpiles.

I have not commented on the deep borehole alternative because it seems highly unlikely to be a serious candidate for an immense fraction of the tight DOE budget. In view of all the above considerations, if I were a decision maker in the choice of alternatives for DOE to pursue, I would favor the Long Term Storage alternative. However, I would add the proviso that, while making all of its existing facilities as safe to operate and as good neighbors as is now humanity possible, DOE should concentrate on developing methods of long term custodianship that will assure to future peoples the ability to maintain control of their fissile inheritance.

It would lighten the burden of those heirs of our rapid industrialization and wartime faith in technology if the US Department of Energy would be a world leader in phasing out the use of nuclear energy, with its accelerating accumulation of high and low level wastes, unless problems of both their long term isolation and short term custodianship can be solved.

Sincerely,

*Ellen Winchester*

Ellen Winchester  
for the Sierra Club National Nuclear Waste Task Force

4/01.06.00

01 06 00

Comment Number 4

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.

5/08.03.01

08 03 01

Comment Number 5

The Department of Energy acknowledges the commentor's opposition to MOX fuel fabrication at European facilities. Criticality controls will be provided in the technical details of the alternative(s) chosen for both storage and disposition. Decisions on storage and disposition of weapons-usable fissile materials will be made based upon environmental analysis, technical and economic studies, national policy considerations, and public input.

6/01.02.00

01 02 00

Comment Number 6

The Pu disposition process would not involve reprocessing. In the case of MOX fuel burning in reactors, the Pu extracted from the weapons-usable fissile materials (not spent fuel) would be made into MOX fuel and consumed in reactors in a once-through cycle. The MOX fuel would displace uranium oxide fuel. The spent MOX fuel then would be disposed of in a geologic repository like other spent fuel from reactors. In the case of vitrification, the vitrified Pu would also be disposed of in an NWPA geologic repository.

7/08.03.01

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.

M-214

SIERRA CLUB, VIRGINIA CHAPTER, VIRGINIA BEACH, VA,  
ROBERT F. DEEGAN  
PAGE 1 OF 1



Robert F. Deegan  
Sierra Club Virginia Chapter  
244 Chesapeake Road  
Virginia Beach, VA 23462

"When we try to pick out anything by itself,  
we find it hitched to everything else in the universe."

*John Muir*

June 7, 1996

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

Thank you for this opportunity to comment on the Programmatic EIS on Storage and Disposition of Weapons-Usable Fissile Materials. Please add my name to the mailing list for all future information on the PEIS.

The alternative of MOX reactor fuel to dispose of plutonium should be discarded. Using electric utility reactors for this purpose would be particularly unwise and raise problems of reactor safety in the steadily aging utility reactors. Moreover, the MOX reactor fuel would add to reactor site security problems and nuclear waste disposal problems.

1/08.03.01

Yours respectfully,

Robert F. Deegan  
Nuclear Waste Issues C Airman

Robert F. Deegan  
Sierra Club Virginia Chapter  
244 Chesapeake Road  
Virginia Beach, VA 23462

M-271

08 03 01

Comment Number 1

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.

Thank you for the opportunity to comment.

As far as I know USA is the only country considering public comment on this extremely important and historic decisionmaking concerning the worldwide dilemma of plutonium disposition. The inclusion of the public voice is certainly at least one step in the right direction, for after all, the bomb and its horrific legacy was created in the first place to protect and defend Democracy.

I hope the voices of the ordinary public, as distinguished from the industrial, commercial or political public, will carry great weight. The nature of this problem is so profound and eternal that it is absolutely necessary to reach beyond the scientific, technologic, political and economic considerations. We must contemplate what decision will be wise, what will reflect the best nature of humankind and what will set the stage for the possibility of a reasonable and manageable vision of the future for generations upon generations to come.

What a task to comment upon. The multifaceted dilemmas, the complexities, the inability to estimate and predict consequences and situations and technology availability into tens of thousands of years into the future make policymaking quite overwhelming, yet a path must be chosen. The day of reckoning as best we can with the legacy we have created has begun.

Certainly we cannot store plutonium for a long term, but in the short term it is necessary to provide funds for plant security, road and storage bunker maintenance, upgraded radiation detection equipment and alarms. To choose a long term storage option would indicate a stockpile policy that indicates we will value and use plutonium, which is a dangerous signal for the development of a rational and comprehensive world policy.

\*\*I believe the option to use plutonium in MOX plants is equally dangerous and UNWORTHY OF IMPLEMENTATION. In the first place policymakers and utility companies rejected this concept some years ago. Not only would we have to construct processing facilities, but we would have to assume the risks associated with fuel fabrication and assume the costs of licensing, transporting and safeguarding connected with this, let alone contending with the actual accounting for the amounts of plutonium in blended fuels and spent fuels plus the attendant disposition problems associated with the creation of more radioactive waste streams.\*\*

1/08.02.00

2/08.03.01

3/08.03.01

F-016

08 02 00

## Comment Number 1

All comments provided to DOE carry equal weight. The comments will be analyzed and responses provided as part of the Final PEIS.

08 03 01

## Comment Number 2

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.

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.

The Science and Global Security Disposition of Separated Plutonium position paper states that "commercial recycling of plutonium raises troubling ECONOMIC AND SECURITY issues. Even if plutonium is considered a "free good" (so none of the costs of reprocessing are charged to the cost of the MOX fuel), a utility using MOX will incur a cost penalty of \$200-\$500 per kilogram of MOX, assuming a uranium price of \$40 per kilogram...this cost differential implies a cost of recycling 100 tonnes of weapons-grade plutonium in MOX of about one half to one billion dollars. Extra inspection effort and physical security would also have to be extended to reactors using MOX fuel." This is a very expensive option in more ways than one.

It is obvious that the nuclear industry would welcome a second wind and a whole new generation of plants to extend this sagging industry, but our plants are aging, the true and comprehensive health, environmental and economic costs of nuclear power are becoming more evident. The whistleblowers are crying to be heard and the Nuclear Regulatory Commission is fast losing credibility with the public. Using the MOX option would be a bad decision. It would promote the siphoning of research and development monies away from long neglected R&D for alternative, sustainable energy resources. Using the MOX option would indicate to other countries that this sort of recycling, sort of distorted wise use is acceptable. How then could other countries ever be persuaded to stop any civilian use of plutonium? The MOX option creates more radioactive waste, maybe not quite as usable for a terrorist bomb, but none-the-less it is a bomb, a terrible relentless assault upon the environment virtually forever. It is not acceptable. Any union of "military special nuclear material waste" with some kind of civilian, utility, industrial use for squeezing risky, costly energy dollars out of it is appalling and alarming and should be immediately withdrawn from the options list!!

There may be no such a thing a safe, secure and environmentally sound storage and ultimate disposition solution. If vitrification is shown to be workable in this country it may provide a possibility of isolation from the environment and the hands of man. Immobilized disposition in a borehole pending finding a suitable site seems to make sense if security is assured.

\*\*If it is true that a focus of the U.S nonproliferation policy is to establish nuclear reductions, then it should be noticed that every nuclear power plant produces plutonium in spent fuel and it should be emphasized that Plutonium should be declared a waste, a liability and should be named illegitimate.\*\*

4/01.06.00

5/08.03.01

F-016

01 06 00

Comment Number 4

Using surplus Pu as MOX fuel in reactors is a one-time event. This approach to Pu disposition is not planned as the beginning of a Pu fuel cycle. In the United States Pu will not be recycled, but will be used as a once-through fuel cycle and the spent fuel will be disposed of. Fuel will not be recycled to extract residual Pu for reuse as fuel. If Pu is not extracted for reuse, it will not be available for reuse in weapons.

08 03 01

Comment Number 5

The Department of Energy acknowledges the commentor's support for borehole disposition using 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.

SIMS, LYNN, PORTLAND, OR  
PAGE 3 OF 3

It is true that this problem encompasses everyone from now on. We need more than intelligence, strategy, interdepartmental and international cooperation, more than adequate technology and sufficient funds, we need vision and wisdom and at this time it is those elements that also must be formulated and articulated.

It is time for a national comprehensive review to examine, coordinate, update and articulate an integrated nuclear policy. The U.S. has a chance to lead the world in the right direction in these serious undertakings and policymaking and we all pray we do a good job.

6/01.00.00

Respectfully submitted,



Lynn Sims  
3959 NE 42  
Portland, OR 97213  
(503) 287-6329

F-016

01 00 00

## Comment Number 6

The purpose of the PEIS is to evaluate environmental impacts of alternatives for storage and disposition of weapons-usable fissile materials. The PEIS does not cover the much broader issue of an integrated nuclear policy in the United States.

SIMS, LYNN, PORTLAND, OR  
PAGE 1 OF 1

June 7, 1996

J. David Multon  
Office of Fissile Materials Disposition  
PO Box 23786  
Washington, D.C. 20026

Dear Mr. Multon,

As the deadline approaches for the formal comment on the DPEIS for the Storage and Disposition of Fissile Materials, I can not help again considering the enormity and complexity of the problem. Although I have already outlined opinions in a prior statement, I must now reiterate my strong opposition to the reactor alternative, even in combination with other options.

Not only would the reactor alternative legitimize plutonium in a commercial circuit, sending a message of its "value" to other countries, but that option would also create more streams of wastes, an unacceptable consequence. Moreover, once a system for such "reprocessing" is in place, it is naive to believe that it would ever end. It is a situation similar to "being a little bit pregnant". Either we choose to enter the dangerous plutonium age or we don't. Now is the time for historic and perhaps unalterable decision making.

Do not choose the reactor option for any part of "disposition". Mankind cannot manage it at this time.

Sincerely, .



Lynn Sims  
3959 NE 42  
Portland, OR 97213  
(503) 287-6329

1/08.03.01

F-061

08 03 01

Comment Number 1

The Department of Energy acknowledges the commentator'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.

SINGLETON, DON, AMARILLO, TX  
PAGE 1 OF 1

May 3, 1996

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

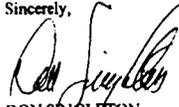
I am opposed to the storage of plutonium at Pantex.

Certainly you can find a place where there will be less damage to people, crops, the water table, and transportation routes when radiation is released than the Panhandle of Texas.

1/08.03.01

I know that this must be stored somewhere, but please. Not here.

Sincerely,



DON SINGLETON  
6614 Roxton  
Amarillo, Texas 79109

M-121

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.

May 4, 1996

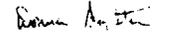
United States Department of Energy  
Office of Fissile Materials Disposition  
P. O. Box 23786  
Washington, D. C. 20026-3786

I am opposed to the storage of plutonium and any other nuclear waste at Pantex. I feel that the risks to our water and agricultural products are too great.

1/08.03.01

I realize that we've gotten ourselves in a dilemma and there probably isn't anywhere to put it. Surely, though, more research will indicate a site which is less a threat to the nation's breadbasket. Here at Pantex is shortsighted and unconscionable.

Sincerely,

  
Donna Singleton

M-155

08 03 01

Comment Number 1

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.

SLAGGLE, NORBERT, SHAMROCK, 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. Potential impacts to groundwater quality are considered to be minimal at all facilities due to hazardous materials/waste handling and treatment/disposal Federal and State requirements.

Comment ID: P0034  
Date Received: May 1, 1996  
Name: Norbert Slaggle  
Address: Route 2, Box 83  
Shamrock, TX

Transcription:

Just wanted you to know I oppose any further expansion of Pantex. Would urge you really to go the other direction. The agricultural impact a disaster could have would be terrible, not only on the water supplies in the Ogallala, but also in the contamination of land all around the area. Agriculture should come first. The location of nuclear weapons and storage should be in areas where there is little or no agriculture or not as nearly productive as agriculture is in the Panhandle of Texas. Thank you.

1/08.03.01

P-034

April 22, 1996

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

In a democracy the voice of all people should be listened to and considered in decision-making when policies so greatly affect grassroots America. Being concerned with the preservation of rural America, I am seriously 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 ensure 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 this document fails to address very critical human issues.

In reviewing the alternative for the possible future of Pantex, it becomes very evident that all of the nation's weapons-usable plutonium not in active warheads 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 interim 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 disassembly/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 saddles our nation with a \$300 billion dollar cleanup problem.

This document states there would be few negative effects from doing any and all of those activities at Pantex. What the document fails to address is the impact on the good 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 meat 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 seven other Midwestern food producing states. With high explosives, chemicals, solvents, and radionuclides, Pantex has contaminated the fine grained layer of water bearing sands above the Ogallala aquifer. 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 missions at Pantex seems shortsighted and ill-conceived. 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,

*Doris Smith  
As a member of the Pantex Plant Citizens Advisory Board, I  
oppose Pu Storage at Pantex and strongly oppose any processing*

1/09.00.04

1/09.00.04  
cont.

2/08.03.01

M-112

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.

SMITH, DORIS  
PAGE 2 OF 2

of plutonium over the (spelled) groups. It  
makes no sense to have the (spelled) directly  
radioactive material in the world in the  
middle of production (spelled). It's like  
putting poison in your cereal bowl.  
I and you see your consideration of  
this major issue. *Doris*

2/08.03.01  
cont.

M-112

Comments for PEIS Public Hearing on  
Storage and Disposition of Weapons-Usable Fissile Materials  
and  
Stockpile Stewardship and Management  
Amarillo, TX April 22, 1996  
Doris Berg Smith

In a Democracy the voice of the people is important in any decision-making policies regarding how our government will manage surplus nuclear materials and what forms of disposition are being considered. At this time it is vital that all the right questions are asked to protect the natural resources of this area for the future generations of not only the Texas Panhandle and the State of Texas, but of the world.

Many issues come into play in this very over-arching discussion. Not the least among them the cost to us the taxpayer to produce these documents and to find them flawed in many ways. These Documents are lacking important information in many areas that make it virtually impossible to even begin the discussion.

The over-all cost to you and me, neighbor, for implementing the expensive options characterized in these documents are not prudent or wise. Why is the Department of Energy so intent on building new Research, Development and Testing facilities when the entire world is looking to the U.S. for leadership in an extension of the Non-Proliferation Treaty, and a zero threshold for a Comprehensive Test Ban. Instead the intent seems to be continue to build and test!

In the SSM-PEIS the scenario for these options, in a downsizing of the nuclear weapons complex, alone is expected to exceed \$50 Billion within a decade. These proposed new facilities are expensive! In this time of tight budget constraints, we the grassroots people should be imploring our Congressional leaders to stop all this massive spending on projects which lead to a build up in nuclear weapons. How many weapons do we need before we say, "That's enough?" How many nuclear warheads have we used?

It is time now, with the downsizing, to really actively pursue REAL DOWNSIZING. Do we want to continue to drag our country into further indebtedness by continuing nuclear weapons production? What is the real reason behind pouring dollars into Defense - are we trying to keep war and war games going in the pretense that this is the way to build peace and to achieve economic development in rural communities across America? This is a 'sunset industry', my friends and neighbors, and needs to be managed as such.

What will the DOE and "We" do with all the waste that will be generated for at least the next 20 years? There are no licensed facilities to accept the wastes that are piled up on facilities throughout the DOE Complex at this time - why generate more than needs to be generated.

We are now faced with storage and disposition of surplus fissile materials, every option considered has tremendous waste streams attached to any option. Where will this waste go? It seems quite evident that the site that creates the waste, keeps the waste. Will that saddle communities across this country with the economic and environmental problems of hosting waste treatment, storage and processing facilities?

1/12.03.00

TX-066

12 03 00

Comment Number 1

As noted in the PEIS, TRU wastes will be stored at the disposition site(s) until geologic disposal is available. The products from the Immobilization Alternatives would also store the immobilized Pu product until geologic disposal is available.

SMITH, DORIS BERG, AMARILLO, TX  
PAGE 2 OF 2

In the PEIS's where were the impacts to the present agricultural economy which has built and sustained this area? Why were the risks to this economic stronghold not assessed? What will happen when we no longer produce food for people, where is our priority? Are bombs more important than food? We in agriculture strive to produce quality, wholesome food for the world population - one farmer feeds in excess of 131 people, yet the industry across the road from us builds bombs to annihilate people. Where is our sense of morality and respect for life?

2/09.00.08

The documents fail to address the issue of the location of Pantex over the Ogallala Aquifer. Water and agriculture are the real wealth of the Texas Panhandle, without them there would be no "Texas Panhandle". Food is the most important commodity we produce - it must be protected.

Not all alternatives for siting the processes for storage and disposition were analyzed - if Manzano Weapons Storage Site at Kirtland Air Force Base has facility that could store 30,00 pits, why was it not further characterized in the other documents?

3/01.05.00

We say to you DOE, we want no storage of surplus plutonium at Pantex because it is dangerous and will lead to plutonium processing which results in additional waste generation and storage.

4/08.03.01

No processing of plutonium at Pantex since every plutonium processing facility has created large amounts of contamination which has adversely affected the workers and the public.

No waste disposal facilities at Pantex because we must preserve and protect the Ogallala aquifer.

5/09.04.08

Historically the plutonium at Pantex has been in pit form, now with these documents all of a the nation's weapons-usable plutonium not in active warheads will be stored at Pantex - plutonium will come to Pantex from Rocky Flats, Colorado; Hanford, Washington; Los Alamos, New Mexico; Savannah River, South Carolina; Nevada Test Site; and the Idaho National Engineering Lab. We find this unacceptable to an agricultural productive area.

No nuclear power reactors at Pantex - there is no need to construct them and the use of MOX fuel in them will not destroy the plutonium - it only creates more plutonium.

4/08.03.01  
cont.

Please do not turn the Texas Panhandle, known for its beef and cereal grain production, into a plutonium waste site. You have created enough of these tragic land problems across the United States - there is no need to create another one here. It is very much like putting poison in your cereal bowl! When this area becomes contaminated - what have we gained?

TX-066

09 00 08

Comment Number 2

Any radiological and chemical releases resulting from the Proposed Alternatives would be within regulatory limits. Therefore, the quality of agriculture in the Panhandle would not be jeopardized, and agriculture-related employment in the Panhandle region would remain unchanged.

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), Pantex operations contribute to the depletion of the Ogallala Aquifer and are analyzed in the Draft PEIS.

Current and future operations at Pantex are not expected to impact the soil used for agriculture and farming in the Pantex region.

01 05 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.

08 03 01

Comment Number 4

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 08

Comment Number 5

Potential impacts to groundwater quality are considered to be minimal at all facilities due to hazardous materials/waste handling and treatment/disposal Federal and State requirements.

Mr. Thomas Grumbly, UnderSecretary of Energy  
Dept of Energy, 1000 Independence Avenue, S.W  
Washington, D.C. - 20585

June 2, 1996

Ref: Enclosures

My dear Mr. Secretary:

Budget limitations promise to kill progress at Rocky Flats, so the former weapon silo proposal is an option for you to consider in the draft PEIS on Storage and Disposition of weapon-usable fissile materials. It is a budget-maker that could save costs of both storage capacity and security until a disposition facility is on line, and should be in our interest to reduce our cost for plutonium security in Russia.

An Environmental Impact Statement on Storage and disposition of weapon-usable Fissile Materials fails to propose observable U.S. and Russian storage of pits from weapon dismantlement and stabilized, canned weapon-usable fissile material now poorly-held at Rocky Flats and at Pantex. I propose feasibility study of their storage in Minuteman silos, until our surplus fissile materials can flow to disposition, not wasting U.S. or Russian silos by implosion.

1/14.00.00

I am writing to the President and Speaker and others, asking for feasibility study of Minuteman silos ... to capture great potential budget savings (silos having been found feasible for inert storage), as economical, hardened interim-storage sites already in place in both the United States, and in Russia.

Minuteman silos here are such unique assets, young enough in their design-lives to furnish the U. S. and IAEA secure and accountable storage on both our own store of pits, and the stabilized canned inventory to flow from Rocky Flats. Perhaps with Russians witness of our sealing silos here they will match us, with silo storages witnessed there, until future means of disposition are in place and agreed upon for both inventories. I believe you should expect the Russians to also recognize silo storage as a budget-maker, with costs of both facilities and guarding them militarily a least controversial method for both nations for adequate defense and security, under IAEA oversight.

2/15.00.00

My references show that some 1,000 Minuteman silos were built, and Nightline recently reported only 138 wasted so far by implosion; they were shown robust, hardened, and easily servicable for loading missile-conformal casks of pits and canned fissile inventory, using Air Force missile-erection vehicles servicing sites today.

M-286

14 00 00

Comment Number 1

The use of existing facilities at non-DOE sites for storage has been considered but was eliminated in the screening process. The reasons for the elimination include cost, environmental, safety, and health concerns, and public and institutional acceptance. In the case of a DoD site, the additional costs and regulatory requirements for support facilities such as radioactive materials analytical laboratories, radioactive waste treatment, and nuclear material processing facilities associated with long-term storage could be very high. Furthermore, the public and other Government agencies would express concern over creating another DOE nuclear site when several are being phased out.

15 00 00

Comment Number 2

Comment noted.

SMITH, FRANK WHITE, BOULDER, CO  
PAGE 2 OF 4

And please note that Warren AFB's silo-squadrons in Colorado-Nebraska-Wyoming were studied in the EIS cited for Peacemaker, which found the silo locations benign, most importantly as lacking seismic risk, but also benign on all other environmental parameters.

I am a Rocky Flats stakeholder on Plutonium and HEU vulnerability here, and have found that because of treaty requirements, your Manager has not pursued feasibility study of former weapon silos. Pits, however, are at the DoD/DoE interface, and both Departments have the duty (and need) to economize weapon dismantlement-and-storage in both the United States and Russia. Both should search out the most affordable means of addressing the holding of fissile materials in secure, monitorable and economical interim storage.

Minuteman silo infrastructure interim-storage may well help you work around the probable NIMBY contest(s) against interim-storage options inside the Weapons Complex, since remote silo sites, to their rural neighbors, are risks no greater than at present from armed weapons in their silos, to which they have become accustomed:

- Inert-gassed storage of pits and 50-year canned inventory, in a particular silo that now holds an armed weapon would in fact reduce specific risk to its neighbors; and
- the population at risk around inerted silos used for storage of pits and 50-year canned inventory, is greatly less than urban populations at risk in Denver and Amarillo, and thus justify silo interim-storage.

Storage of fissile materials in metropolitan Denver upwind of more than two million people and a seat of government, and the storage of pits in targetable, unhardened surface bunkers, already at storage capacity on Pantex, near Amarillo's population ... per the O.T.A. reference, fully justifies feasibility study of the former weapon silo alternative, for inerted interim storage of fissile materials in facilities kept under military surveillance of the highest order by the Air Force.

And in Russia, silos are also likely located far from metropolitan centers as well, a compelling point of mutual interest and justification which, if silos are found feasible, could easily lead to the mutual abandonment of treaty-required silo implosion.

1/14.00.00  
cont.

Mr. Secretary, I have no need-to-know, but the several others listed below do have the need to learn that engineering, security, risk and cost feasibility of weapon silos are in fact not feasible. And they will be eager to hear of the Finding which, if positive, will save budget resources for many other pressing needs than interim-storage, under the severe budget limitations facing Defense and Energy.

Now finally, the Draft Environmental Impact Statement on long-term Storage and Disposition of Weapons-Usable Fissile Materials, under Dr. Canter's leadership, does not look outside DoE sites for storage options, but has recognized Denver's 2.3 million people at risk, and on-site storage at Rocky Flats terrorist-targetable. I hope you will direct the proposed feasibility study now, so that it will have been considered in the Secretary's Record of decision that will flow from draft DoE/EIS-0229-D, written without any off-site storage option. And naturally enough, the proposal is an inert-gas storage option against the new on-site storage facility you committed to build here for the Rocky Flats inventory of casked, canned, stabilized inventory.

You agree in principle, I am sure, that the feasibility of using former Minuteman silos, in cooperation with the Air Force, should not be overlooked for interim-storage, with near-term silo availability also assured for better security in the weapons-dismantlement program.

At your disposal, and red-  
badged for Rocky Flats Plant



Frank White Smith  
285 Mohawk Drive  
Boulder, CO - 80303

Copies to: President and Speaker, Sec. O'Leary and Perry; House Members Schaefer, Schroeder and Skaggs; Senators Lugar and Nunn; Gov. Romer and Lt. Gov. Dr.Schoettler; Dr. Canter and Wm. Rask, DoE.

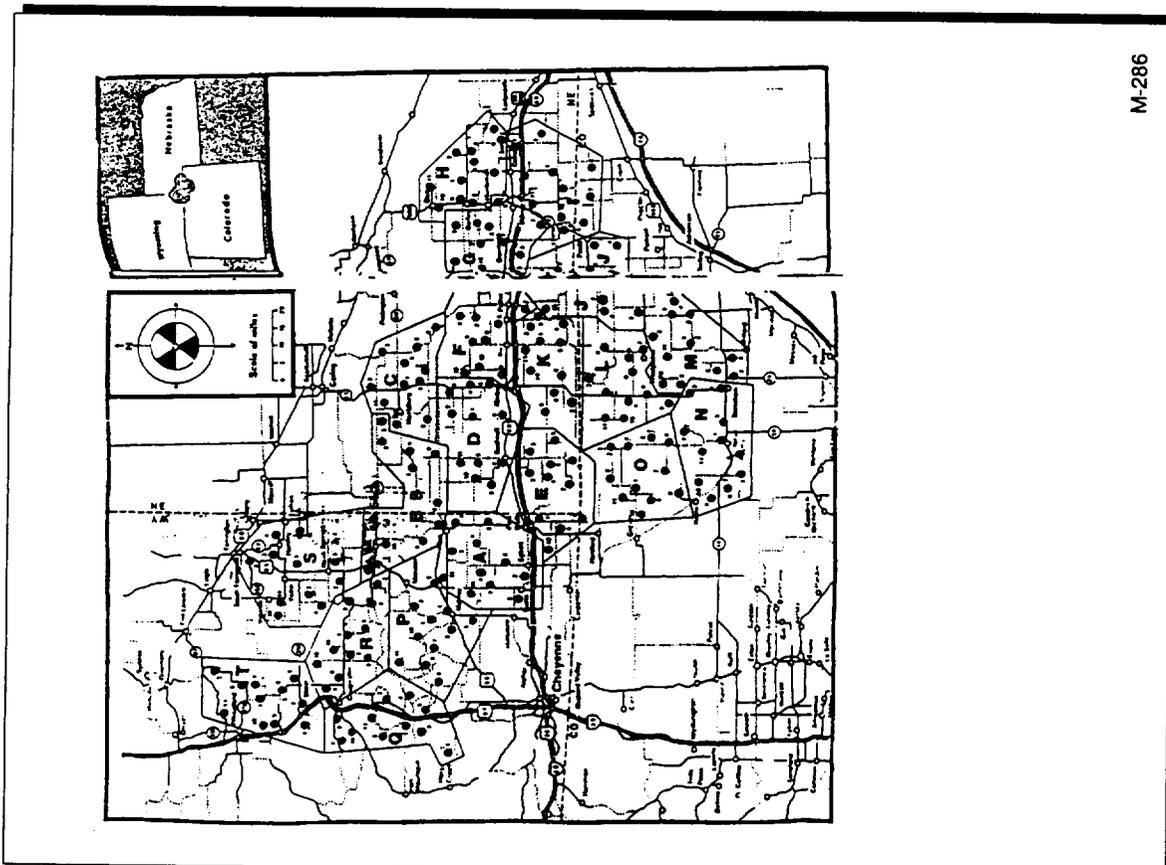
3/01.01.00

M-286

01 01 00

Comment Number 3

The Department of Energy's Proposed Action for storage of weapons-usable fissile materials includes moving the weapons-usable Pu out of RFETS and into one or more designated storage facilities at the selected storage sites. The planned schedule calls for these long-term storage facilities to begin operation in the year 2005. Interim storage of various nuclear materials at RFETS is addressed in the RFETS Interim Storage EIS.



M-286



## Snake River Alliance

□ Box 1731 - Boise ID 83701 - 208/344-9181  
□ Box 4000 - Ketchum ID 83340 - 208/730-7371  
□ 310 E. Center - Pocatello ID 83201 - 208/234-4782

June 6, 1996

Mr. J. David Nulton  
Director  
Office of NEPA Compliance and Outreach  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
P.O. Box 23786

Washington, D.C. 20585  
By FAX: 1-800-820-5156

Dear Mr. Nulton:

The Snake River Alliance is an Idaho-based citizens organization that has served as the citizen monitor of activities at the Idaho National Engineering Laboratory for the past 17 years. We have 1,200 individual, family, and business members, most of whom live in southern Idaho. On their behalf, I offer the following comments on the *Storage and Disposition of weapons Usable Fissile Materials Draft Programmatic Environmental Impact Statement*.

The Snake River Alliance's primary concerns are:

**The Disposition Draft PEIS Might Actually Promote Proliferation**  
Some of the alternatives in the Draft PEIS do not reduce the risk of proliferation. In fact, two of the proposed disposition options might encourage further proliferation throughout the world. President Clinton's Presidential Decision Directive No.13 directs the United States to eliminate stockpiles of highly-enriched uranium and plutonium to reduce the global risk of proliferation. Two of the three proposed disposition technologies do not necessarily eliminate these stockpiles from being used in a bomb. Electrometallurgical reprocessing and placing plutonium in a reactor only recycle plutonium. Part of the problem is the stored weapons standard

1/01.06.00

F-066

01 06 00

Comment Number 1

The purpose of the PEIS alternatives, including the Electrometallurgical Treatment Alternative and the Reactor Alternative using MOX Fuel, is to provide potential paths forward to make this Pu as inaccessible for weapons use as the much larger and growing quantity of Pu that exists in spent nuclear fuel (Spent Fuel Standard). These alternatives would convert Pu to a much more proliferation-resistant form for disposal in a geologic repository. While the residual Pu could be recovered through the reprocessing before disposal, such reprocessing of this form, it would be technologically difficult, costly, and would involve high radiation exposure; thus, theft or diversion would be highly visible and no more likely than retrieval of the Pu from the much larger inventory of spent fuel produced over many decades of commercial reactor operation.

**SNAKE RIVER ALLIANCE, BOISE, ID,  
ROBERT MCENANEY  
PAGE 2 OF 8**

used in the Disposition PEIS is practically interchangeable with the spent fuel standard. DOE claims that the spent fuel standard will ensure that stockpiled materials will be rendered inaccessible. The DOE also defines under the spent fuel standard spent fuel as a resource. By this logic, stockpiled material-plutonium and HEU might still be considered resources also. This is the case under the electrometallurgical treatment process alternative and the reactor category. Both technologies do not permanently dispose of the stockpiled material so that it can never be used again. Plutonium and HEU under both proposed categories could be recycled to be used in a bomb. Even if disposed material is never recycled in the U.S., it sets the wrong example for the rest of the world. If the U.S. does not permanently dispose of stockpiled material, it makes it more difficult for the U.S. to implement global policies with other nations to reduce the world's stockpiles of bomb grade material.

Even a worse message would be sent if DOE chooses to implement the reactor category in the Disposition PEIS. For one, it directly violates the President's directive that the "United States does not encourage the civil use of plutonium." Using plutonium or HEU in a reactor only encourages a plutonium-based economy in the U.S.; and for the rest of the world also. Potential bomb-building countries will find it far easier to justify the use of plutonium-based reactors under the guise of a civilian program because of the precedent set by the U.S. It would be far more difficult for the U.S. to discourage potential new bomb building countries from abandoning their own plutonium reactor programs if the U.S. cannot eliminate its own use of plutonium in a reactor program.

The DOE should use the Nuclear Waste standard in order to ensure that the disposition program meets the President's own directive. DOE should remember that a major reason we are dealing with the mess of stockpiled materials in the first place is because it applied the spent fuel standard to irradiated reactor material. So long as we consider spent fuel as a resource, there will always remain the possibility that spent fuel could be one day reprocessed again in order to extract the plutonium and the HEU for bomb building purposes. It is not unreasonable to think that the same type of logic that justified reprocessing spent fuel in the past is now being applied to plutonium and HEU in the Disposition PEIS. So long as these materials are defined as "resources," DOE cannot adequately carry out the mission of forever ensuring that these materials cannot be used in nuclear bombs.

**The Disposition PEIS Does Not Justify Disposal Alternatives**  
The Disposition PEIS ruled out a number of technologies because it was found that certain technologies just could not make it to the table as working proposals for the draft Disposition PEIS. A number of deep

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**Comment Number 2**

Technologies that meet the Spent Fuel Standard will convert surplus fissile materials to a form that is inaccessible for reuse in weapons. HEU is considered a resource if it can be blended down and used in fresh fuel for nuclear reactors. Although Pu can also be used in fresh fuel (MOX) for nuclear reactors, it is not generally considered a resource because uranium fuel can be produced more economically. The cost of burning MOX fuel in a reactor, although not as economical as all uranium fuel, is somewhat reduced because of the revenues produced from electricity production. However, HEU and Pu are not considered resources after they have been burned in reactors and have achieved the Spent Fuel Standard.

The Electrometallurgical Treatment Alternative would place Pu into a glass-bonded zeolite (GBZ) waste form that would be sent to a geologic repository for disposal. The Pu under this alternative would not be used in a reactor.

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**Comment Number 3**

Comment noted.

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**Comment Number 4**

The President's Nonproliferation Policy states 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.

Decisions on disposition of weapons-usable fissile materials will be made based on environmental analyses, technical and economical studies, national policy considerations, and public input.

01 04 00

**Comment Number 5**

The spent fuel that would result from burning weapons-usable fissile materials in reactors is not considered a resource, nor is existing spent fuel from domestic commercial nuclear reactors. Reprocessing of materials that meet the Spent Fuel Standard is not proposed under the disposition effort.

geologic alternatives such as "Injection Into Continental Magma" or "Emplacement in the Sub-Seabed" were found to be "immature and "very immature." There certainly is no dispute that a number of similarly ruled out options are indeed immature. But it is then even more difficult to comprehend why those technologies that made it to the draft are any more "mature" than those that were ruled "immature." The Disposition PEIS does not provide an adequate background nor are there any accompanying studies that elaborate why alternatives like the deep-bore hole option are mature. It would not be that daring to assert that the current disposition proposals are indeed "immature" also. The deep-bore hole suggestion has no associated real world experience that can at all justify whether it will ever be an adequate option. The same also applies to the reactor category and the electrometallurgical reprocessing proposal. Not a single disposition option has truly been tested in real world terms. It is safe to say that it is immature of DOE to go ahead and proceed with technologies that have not been tested.

What is more troubling is the inability or the unwillingness of DOE to adequately anticipate all of the future impacts of its disposition alternatives. The disposition PEIS claims that if and when any of these disposition technologies are implemented, any unforeseen impacts will be addressed by future site specific PEIS's. The Disposition PEIS should address any impacts associated with disposition technologies now, not later. To implement a disposition option with a wait and see attitude is simply unacceptable. If there any impacts concerning any of the alternatives, they must be addressed in this document. Either DOE is not providing the whole story in the Disposition PEIS, or it understands that the breadth of this PEIS at this point is truly in the immature stage. Whatever that answer might be, DOE does not address the actual impacts of any of these disposition technologies. There is simply not enough information to go on to make a sound decision about plutonium and IIEU disposition.

**Specific Concerns About the Electrometallurgical Treatment Alternative at Argonne-West**

There are major contradictions within DOE policy when it comes to dealing with materials that are potential proliferation risks. In one instance DOE states that reprocessing to generate fuel for a reactor is an incompatible option for disposition because "during reprocessing to separate Pu from spent fuel to fabricate more fuel, there are stages in the processing and handling when weapons-usable materials are more vulnerable to theft or diversion than the stored weapons standard." Despite this kernel of truth, the DOE has decided to go ahead with a reprocessing technology whose original purpose was to do exactly that-generate fuel to be used in a

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**Comment Number 6**

The process and justification for selection of technologies evaluated in the PEIS are described in a separate Screening Report prepared by DOE and in Chapter 2 of the PEIS. A number of alternatives involving placement of materials below the earth's surface were considered, including emplacement in the sub-seabed and injection into the earth's magma. There is little data available to support these options and the retention of Pu in these media is questionable. A major concern would be the environmental impacts of any release of Pu materials following emplacement. Furthermore, the time and cost of developing these technologies would be significant and the outcome uncertain. It is expected that regulatory requirements would be extremely difficult to achieve, and that these would be internationally sensitive particularly if international waters were involved. Therefore, these types of technologies were eliminated from consideration. Although the Borehole Option considered in the PEIS is less mature than the Reactor and Immobilization Alternatives considered, it was found in the screening process to be mature enough for inclusion as an option in the PEIS. It was also recommended for study by the NAS in their 1994 study on the *Management and Disposition of Excess Weapons Plutonium*.

01 02 00

**Comment Number 7**

The PEIS analyzes six DOE sites for many of the facilities, and generic sites for some facilities such as the borehole complex. All facilities are described in terms of their conceptual design. The intent of the environmental analyses is to provide a bounding condition for the impacts, which would be sufficient for comparison of the alternatives at this time. Once the disposition technologies have been selected for implementation, DOE would invest in more detailed facility designs, testing and demonstrations, and appropriate site-specific tiered environmental analyses to help determine which site or sites (and which location or building within each site) would be used for disposition. To conduct detailed designs and analyses at various sites for all the technologies at this early stage is not necessary at the programmatic level.

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ROBERT MCENANEY  
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reactor.

The Alliance recognized this contradiction in its comments addressing the Electrometallurgical EA Demonstration Project in April 1996:

Pyroprocessing is the reprocessing portion of the IFR program transformed imperfectly into a spent fuel "management" program. Since it was in large part spent fuel reprocessing that led to cancellation of the IFR, Argonne has been trying to mask the program ever since. In fact, the National Academy of Sciences and the Secretary of Energy are among those who have stressed that plutonium separation was the intended use of the technology when it was part of the Integral Fast Reactor.

8/11.00.08

It is illogical for DOE to proceed with a project like electrometallurgical reprocessing that generates materials that are serious proliferation risks and then possibly go ahead with the electrometallurgical reprocessor at ANL-West as a treatment for plutonium disposition also. In fact, DOE is using the current Electrometallurgical Demonstration Project as justification for possibly using ANL-West as a treatment site for disposition. In other words, it is using a reprocessing technology, which DOE admits is a serious proliferation risk, in order to champion disposition to avoid proliferation.

9/08.03.01

Again, DOE is sending the wrong message to the rest of the world—that it is all right to reprocess as long as it is for environmental management reasons. So long as the stored weapons standard is practically identical to the spent fuel standard, DOE will continue to run into contradictions like these.

10/01.06.00

In assessing the cumulative impacts of the proposed actions, the PEIS lists those site-specific reviews that support the proposals in the Disposition PEIS:

Additional site-specific environmental reviews are currently being prepared by DOE. A listing of these reviews is provided in Table 1.4 2. In particular, the site-specific, site-wide EIS's being prepared cover continued operations for some of the sites evaluated in the Storage and Disposition PEIS. (1-9)

The document that is listed that supports actions for INEL is the *Electrometallurgical Treatment Research and Demonstration Project at the fuel Conditioning Facility at ANL-West Environmental Assessment*. This is an EA, not a site-specific EIS like the rest of the documents in the table. It is disingenuous at best to pass off the EA as anything but an EA. First, the Electrometallurgical Demonstration Project cannot sufficiently support the

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**Comment Number 8**

Comment noted.

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**Comment Number 9**

The Department of Energy acknowledges the commentor's opposition to the Electrometallurgical Treatment Alternative. The GBZ logs will be disposed of in a geologic repository, thereby meeting the Spent Fuel Standard. The electrometallurgical treatment process will not "reprocess" the Surplus Pu, but rather convert it to a GBZ. 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 06 00

**Comment Number 10**

Electrometallurgical treatment was considered a reasonable alternative after completion of the screening process and scoping for the PEIS. The NRC recommended successful demonstration of the electrometallurgical treatment process prior to implementation. Upon making the decision on disposition technologies, DOE will demonstrate these technologies before their implementation. The electrometallurgical process is not reprocessing Pu, but rather converting the material to GBZ logs. These logs will be disposed of in a geologic repository, thereby meeting the Spent Fuel Standard.

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**Comment Number 11**

Site-specific NEPA reviews are listed only for purposes of information and for use in assessing cumulative impacts; there is no intent or suggestion that the Electrometallurgical Treatment Demonstration EA is an EIS. Should the Electrometallurgical Treatment Alternative be selected in the ROD, further site-specific environmental analyses would be performed.

|   |                              |
|---|------------------------------|
| <p>actions that take place in the Disposition PEIS. Its intent is to deal with the reprocessing of a limited amount of spent fuel. Second, the Electrometallurgical EA only examines a demonstration project. It does not address the environmental impacts of disposition or the current waste management abilities of ANL-W to handle the significant increase in waste that a disposition alternative would undoubtedly bring. Third, all of the other supporting documents in Table 1.4-2 are EIS's, most of them site-wide EIS's that attempt to address the major impacts associated with waste management missions at the other defense sites. There is a major difference between an EA for a demonstration project and a site-wide EIS. An EA, especially the Electrometallurgical EA, cannot adequately address associated impacts let alone justify that a major action like disposition can be sufficiently supported at the INEL site.</p> | <p>11/11.01.08<br/>cont.</p> |
| <p>Besides that, the current PEIS does not elaborate upon how much potential plutonium could be disposed of at ANL-W, whether these wastes would remain in a consistent form (as was a concern of the NAS), and Argonne's actual storage capabilities. All of these impacts needed a far more serious study before the electrometallurgical treatment process should have even been considered as an option.</p>  | <p>12/05.03.03</p>           |
| <p><b>The Disposition PEIS Limits Comments on the Electrometallurgical Treatment Process</b><br/>Possibly one of the most fundamental principles behind the NEPA process is that an PEIS like this must solicit comments from any interested individual or group that has a vested interest in the PEIS's outcome. These comments mold the final outcome in the Record of Decision. The Alliance believes that the ability to comment about the future impacts of the electrometallurgical treatment process have been severely compromised if not totally nullified by the completely insufficient analysis of the electrometallurgical treatment process in this PEIS. In fact, the actual electrometallurgical treatment process is not analyzed within the PEIS. This is evident by the fact that it is not even cited as source in the references section.</p>   | <p>13/01.04.00</p>           |
| <p>A large part of this might have to do with the obvious fact that the DOE did not complete its evaluation of the current Electrometallurgical EA draft proposal by the time the PEIS was distributed. DOE cannot excuse itself from this mere circumstance by stating that, "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." Well, that just does not cut it. DOE does not maintain the privilege or the right to withhold one's ability to analyze a proposed project's impact. If the EA is not completed by the time of the PEIS's publication so that the public cannot make sufficient</p>  | <p>14/05.03.08</p>           |
|   | <p>15/11.01.08</p>           |
|   | <p>16/08.03.00</p>           |
| <p>F-066</p>  |                              |

**05 03 03                      Comment Number 12**

The Electrometallurgical Treatment Demonstration EA is not being used and should not be construed as justification for Pu disposition. Electrometallurgical treatment, which would be performed at any site, is a reasonable alternative for Pu disposition and is analyzed since all reasonable alternatives must be analyzed under the CEQ regulations implementing NEPA.

**01 04 00                      Comment Number 13**

The PEIS evaluates the disposition of approximately 50 t (55 tons) of Pu for all of the alternatives considered including the Electrometallurgical Treatment Alternative. The product of electrometallurgical treatment would be a GBZ material capable of disposal in an NWA geologic repository for an indefinite period of time. If this alternative is selected, onsite storage of the waste forms would have to be provided pending availability of an NWA geologic repository.

**05 03 08                      Comment Number 14**

More specific information and clarification regarding the basis for analyzing the Electrometallurgical Treatment Alternative is included in Section 2.4.4.3 of the Final PEIS. The data input for the environmental analysis for the Electrometallurgical Treatment Alternative is reported in reference LLNL 1996b.

**11 01 08                      Comment Number 15**

The *Environmental Assessment for the Electrometallurgical Treatment Technology* was in preliminary draft form when the PEIS was ready for distribution. A review of the preliminary draft indicated that there was no evidence to support the rejection of the Electrometallurgical Treatment Alternative as a reasonable alternative for Pu disposition from the environmental perspective. Section 2.4.4.3 of the PEIS describing the Electrometallurgical Treatment Alternative was revised to provide the results of the NAS report and to include the decisions made from the Electrometallurgical Treatment Demonstration EA.

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comments about a proposed project's impacts, DOE should realize that this particular project cannot be analyzed in this PEIS. And even if DOE does include the conclusions made by the NAS on the Electrometallurgical EA demonstration project in the final draft, DOE is then confusing reprocessing a set amount of EBR-II fuel rods with the proposed electrometallurgical treatment of plutonium scantily described in the Disposition PEIS. One would think there is a significant difference between reprocessing spent fuel and treating surplus plutonium. If DOE proposes to electrorefine plutonium while adding cesium-137 as a radioactive barrier in order to create a new waste form at ANL-West, DOE simply must evaluate that action as a new and unique impact. Not only that, DOE should also evaluate the cumulative impacts that the current proposal to electrometallurgically treat plutonium and the Electrometallurgical Demonstration Project might have together upon the whole INEL complex in a separate PEIS.

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cont.

**DOE Fails to Analyze the Cumulative Impacts of the Proposed Action**

Under the proposal to build a MOX reactor or evolutionary MOX reactor at a current DOE site, the DOE properly analyzes the various impacts site by site. For instance, the customary NEPA checklist of Land Resources, Site Infrastructure, Air Quality and Noise, Water Resources, Geology and Soils, Biological Resources, Cultural and Paleontological Resources, Socioeconomics, and Public and Occupational Health and Safety are all applied to each site on a case by case, individual basis. But when we get to the most important checklist item for this PEIS, "Waste Management," the DOE chooses to analyze this impact generically. Rather than looking at the waste management impacts at Hanford or Savannah River for example, DOE provides a generic analysis of the possible impacts for all of the sites. In one turn, DOE analyzes each site as if they have unique concerns, but then states that the waste management impacts can be applied to each site as if the waste management capabilities and the associated impacts are the same for every site. DOE knows better than this. Certainly Hanford has different waste management concerns than Oak Ridge or the INEL. To claim otherwise illustrates that DOE is not actually willing to elaborate upon the impacts in this Disposition PEIS, or DOE just does not know what the impacts might be. Either way, the Disposition PEIS over and over again fails to analyze all of the cumulative impacts for each particular disposition alternative.

17/09.11.08

This is exacerbated by the fact that in the Disposition PEIS, one site might host more than one disposition alternative listed in the PEIS. For instance, one DOE site could end up vitrifying plutonium while also implementing a separate program to burn plutonium in a reactor. The Disposition PEIS does not even look at the magnified impacts that would

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**08 03 00**

**Comment Number 16**

The Finding of No Significant Impact (FONSI) for the *Environmental Assessment of Electrometallurgical Treatment* was approved on May 15, 1996 after the public comment period and public meetings. The electrometallurgical treatment process is analyzed in the PEIS as a reasonable alternative for Pu disposition. The PEIS has a different purpose and need from that of the limited demonstration for treatment of Experimental Breeder Reactor (EBR)-II fuel. Should the Electrometallurgical Treatment Alternative be selected in the ROD, further site-specific environmental analyses will be performed, as appropriate.

**09 11 08**

**Comment Number 17**

The waste management analysis assumed generic greenfield facilities for the disposition alternatives and Consolidation and Collocation Storage Alternatives to meet programmatic requirements for total storage capacity and disposition throughput. For the Upgrade Storage Alternative, site-specific facilities were determined to meet site-specific storage requirements. The resultant waste generated from each of these facilities was added to the existing site No Action waste being generated and compared to site waste management infrastructure (storage, treatment, and disposal capacities). Each site with a clear adequate capacity or lack of capacity to handle a particular waste stream was highlighted in the waste management analysis. In the site selection process, DOE will consider the experience and current waste management infrastructure of all the sites. Coordination of all waste activities being proposed at each site is being done by DOE's Waste Management Program. The cumulative impacts section of the PEIS has a site-specific analysis for waste management of storage alternatives. A generic disposition cumulative impacts section was added in Section 4.7 of the PEIS for the disposition alternatives. Site-specific disposition waste management cumulative impact analyses will be performed in future tiered NEPA documents, as appropriate.

occur if two or more alternatives are implemented at one DOE site. Waste management concerns should not just address what types of wastes will be generated, but how each site can accommodate future storage of wastes on top of the wastes that are already managed at all of the afforded DOE sites.

These decisions cannot be made in a vacuum. Past expertise in dealing with similar waste forms should be considered in this analysis. If and when DOE decides upon a course of action, the PEIS that justifies the action has to take into account past experiences. For instance, if DOE decides upon collocation, the final PEIS must fully examine past experiences of the Oak Ridge and Pantex complexes in their struggles to deal with consolidation of their stockpiles of materials. If mistakes were made in the past, DOE cannot deny that these problems could arise again to impact various sites. In September 1994, DOE found over 1,300 violations or nonconformances for the handling and storage of HEU at the Oak Ridge Reservation. DOE's infrastructure has not changed dramatically since those storage problems were identified at the Oak Ridge Reservation. If anything, spending for the DOE has been on the decline since September 1994. The same infrastructure that allowed these problems to occur is the same infrastructure (with fewer resources at hand) that will be implementing a disposition policy. Hence, problems that have occurred in the past could arise as problems in the future.

#### Conclusion

The Snake River Alliance would like to emphasize that we believe the disposition of weapons-usable material is an extremely important mission for this country to embark upon. Disposing of this material so it meets a spent fuel standard is at least a step in the right direction. But rather than implementing options that are discussed in the Draft PEIS, DOE should direct itself to action that would remedy the current problem at hand. The construction of a pilot vitrification plant to demonstrate the safe stabilization of plutonium residues, for example, would not preclude DOE from implementing other strategies considered in the PEIS. The implementation of such a project would instead send the positive signal that DOE is resolved to address the disposition problem as well as addressing current pressing environmental and health issues.

In conclusion, the Department has a significant amount of work ahead before it can produce an adequate Draft PEIS on the storage and disposition of weapons-usable fissile materials. The document at hand is woefully inadequate and flawed. At this point the Department should provide another opportunity for public comment after the concerns previously mentioned in our comments have been adequately addressed in a revised Draft PEIS. Nothing less than a fully sufficient NEPA analysis

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#### Comment Number 18

The possibility of more than one alternative being selected for disposition is discussed in Section 2.5.2.1 of the Draft PEIS. The Final PEIS identifies the impacts associated with a hybrid alternative consisting of more than one technology. The Final PEIS also examines combined impacts for storage plus disposition for the Preferred Alternative.

09 02 08

#### Comment Number 19

The Y-12 Plant currently stores HEU in several facilities, all located within the Plant's PA. Category I and Category II quantities of HEU (as defined by DOE Order 5633.3B, *Control and Accountability of Nuclear Materials*) are stored in Material Access Areas (MAAs). Within each specific MAA, the HEU is stored within properly designed and built vaults or vault-type rooms. These existing storage facilities meet current security and ES&H regulations and requirements. Under the No Action Alternative for ORR, DOE is committed to maintaining these facilities to ensure safe operation for the balance of the facilities useful lives. For the other reasonable storage and disposition alternatives, compliance with all applicable ES&H requirements is an integral and important part of each storage or disposition facility design.

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#### Comment Number 20

The Department of Energy acknowledges the commentor's support for a vitrification pilot plant. 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.

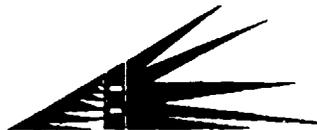
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should be expected.

Submitted by

Robert McEnaney

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June 7, 1996

United States Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, DC 20026-3786

Dear People,

These comments are in addition to oral comments made by Don Hancock in Amarillo, Texas on April 22 and to the letter, signed by SRIC and numerous other organizations and sent to Secretary O'Leary on May 6.

SRIC strongly believes that the Draft Programmatic Environmental Impact Statement (PEIS) on the Storage and Disposition of Weapons-Usable Fissile Materials is fatally flawed and must be substantially revised and reissued for additional public comment before it can be used for decisions about storage or disposition of fissile materials.

1/08.00.00

Safe and verifiable storage and disposal of surplus plutonium and highly-enriched uranium is one of the most urgent and significant international security matters of our time. However, precipitous decisions about disposition based on inadequate technical, cost, and proliferation information will likely exacerbate existing deficiencies in handling of fissile materials, thereby making the difficulties of implementing any decisions even greater.

The National Environmental Policy Act (NEPA) dictates that DOE present a credible and accurate discussion of reasonable alternatives in its review of this issue. Further, the potential consequences of an inappropriate decision compel DOE to demonstrate better than its normal quality of NEPA performance - ensuring particularly that the nonproliferation and cumulative impacts of its decision are soundly addressed. The current Draft PEIS meets neither of these standards.

Regarding disposition, it is clear from DOE's research bias toward mixed oxide (MOX) fuel and reactor technologies that the draft PEIS and DOE's policy are being driven by the desires of the nuclear industry to gain politically and economically by receiving government subsidies such as free fuel for existing reactors and federal funding for new reactors. The NEPA process should not be hijacked by such pork barrel politics.

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F-057

08 00 00

Comment Number 1

Although DOE is committed to public input and openness, DOE does not contemplate additional public comment on this PEIS. Public comments have already been received in scoping and public meetings. The comment period for the PEIS was extended to 92 days; in addition, technical, cost, schedule, and nonproliferation analyses were released for public comment.

01 02 00

Comment Number 2

The alternatives analyzed in the PEIS were determined through a screening process that included public input on the selection criteria. This process was not politically or institutionally biased.

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Given the difficulties in making and implementing disposition decisions for the next decade or more, the real public and international focus on fissile materials will be their storage, whether DOE considers such storage "interim" or "long-term." Thus, an adequate draft PEIS should provide a comprehensive look at all reasonable alternatives and their environmental impacts.

3/01.01.00

I. However, the draft PEIS is seriously deficient in its consideration of alternatives:

\* it fails to consider all reasonable alternatives for the long-term storage of weapons-usable fissile materials, particularly plutonium pits. Currently, in the Pantex Site-Wide Environmental Impact Statement, the Department acknowledges that interim storage of pits at Department of Defense (DOD) facilities, specifically at Kirtland Air Force Base's Manzano Weapons Storage Area, is a reasonable alternative, which must be analyzed in the EIS. The DOD is also a cooperating agency in that Pantex EIS. The Draft PEIS rejects this alternative for long-term storage of pits although it is clearly as reasonable an alternative for long-term storage as for interim. DOD facilities should be included as alternative sites, and DOD should be a cooperating agency in a revised and re-issued draft PEIS.

4/01.04.00

The draft PEIS (p. 2-6) briefly dismisses the Manzano site because of the need to provide long-term storage of plutonium in forms other than pits and the "ES&H concerns" associated with handling plutonium not in pit form "in proximity to the metropolitan Albuquerque area." However, continuing storage of pits for longer than the 5-10 years considered in the Pantex draft EIS is clearly both a reasonable alternative and is very likely to occur in any case. Thus, the draft PEIS must include as a reasonable storage alternative having pits stored in pit form and storing other plutonium in non-pit forms in a separate facility or at another site.

Of particular interest is the ability of the Manzano Weapons Storage Area to store pits for longer than 5-10 years. Since the draft PEIS states that a new storage facility would have to be built for long-term storage at any of the DOE sites, the possibility that the existing Manzano site (and potentially other DOD sites) could be used for pit storage (even if not suitable for other forms of plutonium) must be fully considered.

5/02.00.08

\* It fails to consider alternatives for storage containers for plutonium. Only one container, which is not yet certified, is analyzed in this document despite the fact that this container is not appropriate for storage of plutonium in all of the variety of forms in which it currently resides throughout the complex. A range of adequate containers must be examined in order to ensure that plutonium stabilization and storage can be done safely.

F-057

01 01 00      **Comment Number 3**

Comment noted.

01 04 00      **Comment Number 4**

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.

Other non-DOE sites (including DoD 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. Under these circumstances, DoD was not included as a cooperating agency.

02 00 08      **Comment Number 5**

The PEIS assumes that all surplus Pu at Hanford, INEL, Pantex, SRS, RFETS, and LANL has been transformed to a stable form that meets the DOE *Standard Criteria for Safe Storage of Pu Metals and Oxides* (DOE-STD-3013-94) for materials greater than 50-percent Pu. Stabilization of the material and the impacts are not within the scope of this PEIS. The material would be stored in containers consistent with the transportation of the materials on or to the site. Containers analyzed for storage of pits include the FL container (currently certified) and the AT-400 (currently under review for certification). Material would not be moved and stored in the AT-400A container without proper certification. Other containers were analyzed for the transportation of other Pu materials (for example, the BUSS R-1 cask for As and the MO-1 for MOX fuel).

\* It fails to consider alternatives that would promote full international inspection of all surplus plutonium and highly enriched uranium. Such an alternative must be considered reasonable since it is expressly included in the President's Nonproliferation policy (p. A-2). Analysis of the alternative should include the ease or difficulty of such international inspection at various sites. For example, how could international inspection be done in Zone 12 at Pantex, the area designated for many long-term storage activities, which will also continue to be the weapons assembly/disassembly area, and which presumably would not be open to international inspection? Are DOE sites which do not have a Defense Programs mission more easily opened to international inspection? How could DOD sites be subject to international inspection?

6/01.06.00

II. The draft PEIS is also severely deficient in its analysis of environmental impacts:

\* it fails to consider fully activities associated with the processing and interim storage of plutonium and highly enriched uranium that will be required to transition this material from its current status at various sites around the complex to the preferred form(s) for long-term storage. The draft PEIS seems to presume that such processing and repackaging receives comprehensive NEPA coverage in some other document(s). That is not the case. Instead, the various existing NEPA documents considering interim stabilization and storage are incomplete. There has been no comprehensive analysis of the stabilization and storage issues, an analysis that should be included in the PEIS.

7/01.01.00

\* It fails to consider comprehensively all of the existing surplus plutonium. Some of the existing surplus plutonium is not, in fact, included in the PEIS, although the draft PEIS says it is (p. 1-2). For example, some of the 11.9 metric tons of surplus plutonium at Rocky Flats has been inappropriately excluded from the draft PEIS. Some of these materials are being analyzed in the Draft Environmental Assessment for Solid Residue Treatment, Repackaging, and Storage, DOE-EA-1120, March 1996. That EA is not even listed in the draft PEIS as a related document (p. 1-8). The table on that page also is a vivid, though incomplete, description of the fragmented NEPA process that DOE is engaged in.

8/01.00.00

A related matter is that for the disposition alternatives, all material is assumed to be in a form suitable for shipping (p. 4 779). However, the environmental and worker impacts of processing those materials into such a form is not included in the draft PEIS, nor in any other NEPA document.

9/10.00.00

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01 06 00 Comment Number 6

The discussion of inspectability by the IAEA is shown in Chapter 1, pages 1-5 and 1-6 of the PEIS.

01 01 00 Comment Number 7

As described in Chapter 1 of the PEIS, DOE has an ongoing program to stabilize non-pit materials containing Pu and miscellaneous uranium materials to meet the requirements of the *Plutonium Vulnerability Management Plan*. The NEPA coverage for stabilization of the weapons-usable fissile materials is beyond the scope of this PEIS, since the PEIS addresses only separated materials. The management of materials stabilization activities, including any NEPA analysis that might be required, is being conducted under the DOE's Environmental Management program in accordance with DNFSB Recommendation 94-1 Site Corrective Action plans.

01 00 00 Comment Number 8

This PEIS addresses the storage and disposition of separated materials including residues (of greater than 50-percent Pu by volume), scrap, and other materials that have been stabilized. The processes and facilities required to achieve stabilization are addressed in other NEPA documents. A discussion of RFETS residues and their treatment appears in Chapter 1 of the PEIS. Reference to the *Solid Residues Treatment, Repackaging, and Storage at the Rocky Flats Environmental Technology Site Environmental Assessment*, and FONSI is included in Section 1.1.1 of the PEIS.

10 00 00 Comment Number 9

Under the No Action Alternative, DOE sites with surplus Pu (Hanford, INEL, Pantex, and SRS) would continue to store Pu-bearing materials in storage vaults and other similar facilities. All Pu materials will be stabilized and repackaged, as necessary, to ensure safe storage. The cleanout, stabilization, and storage of readily retrievable Pu materials are being addressed in several NEPA documents (for example, the Plutonium Finishing Plant Stabilization

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\* In its analysis for various sites, the draft PEIS focuses only on the particular area of the site that would be used for storage or disposition, rather than comprehensively looking at the other activities at a site that could affect storage or disposition. For example, at Pantex, it fails to discuss how the on-going weapons activities in Zone 12 could conflict with plutonium storage.

10/11.00.08

\* The analysis of environmental impacts at all sites is severely limited by the "pre-design" information regarding buildings and facilities (p. B-1 and C-1). The draft PEIS tries to excuse this flaw as regards disposition decisions by stating that no siting decisions will be made in this PEIS (p. 4-1). However, siting decisions will be made regarding storage, so the sites must be looked at comprehensively and the cumulative impacts of storage along with other existing or proposed missions of each site must be fully considered.

11/11.00.08

\* The environmental impacts of particular activities, specifically related to plutonium conversion and MOX fuel facilities, are grossly underestimated. For example, the draft PEIS does not use previous experience of plutonium processing and conversion as the baseline environmental impacts. Operational problems and accidents, for example, at DOE facilities that have engaged in similar activities should be included, as DOE cannot just assume that "improved technologies" will eliminate the possibility of future problems.

12/09.00.08

\* It fails to include in its analysis of disposition options for plutonium the significant impacts surrounding the disposal of high-plutonium-content spent fuel resulting from a Mixed-Oxide (MOX) disposition decision. These impacts are economic as well as environmental. Specifically, the draft PEIS fails to address issues regarding repository disposal of spent MOX fuel raised by the National Academy of Sciences in its 1995 Reactor Options study of plutonium disposition. For instance, DOE fails to consider the higher thermal power of MOX spent fuel and its implications for the cost and safety of a high-level waste repository. The failure to consider issues raised by the NAS study is all the more egregious because the DOE has repeatedly stated that it would be guided by the NAS studies on plutonium disposition. DOE should also carefully address the potentially greater consequences of an accident in a reactor loaded with MOX fuel. A more thorough analysis of MOX use would raise significant concerns about, for example, its link to future reprocessing and long-term U.S. policy regarding reliance on the plutonium fuel cycle.

13/09.11.08

14/09.09.08

15/01.00.00

\* The site specific analysis is often wrong. For example, page 4-727 states that at Pantex "no groundwater would be withdrawn for the project from the aquifer" for construction and operation of evolutionary LWR. That statement is, of course, totally wrong

16/09.04.04

F-057

EIS at Hanford, the Pantex EIS for Pantex, the Interim Management of Nuclear Materials EIS at SRS, and the RFETS Interim Storage EIS) as well as DNFSB Recommendation 94-1 Site Corrective Action Plans. Therefore, the impacts from these actions are not included in the PEIS.

11 00 08                      **Comment Number 10**

Discussions of ongoing and anticipated activities at various DOE sites and how these activities would affect the environmental resources at the sites are given under the title "Cumulative Impacts" in Section 4.7 of the PEIS.

Ongoing assembly and disassembly activities at Pantex occur in bays, cells, and special purpose facilities. Storage activities would occur in building 12-66, a new consolidation or a new collocation facility. Building 12-66 is currently being used for warehouse activities, and the use of it would not conflict with assembly and disassembly activities. Storage activities at Pantex are currently being done in Zone 4. Appendix Q has been added to the Final PEIS to describe storage of RFETS pits in Zone 4. Zone 4 has adequate capacity for pits currently at Pantex and RFETS.

11 00 08                      **Comment Number 11**

For disposition without the conceptual design of a facility, there would not be a detailed estimate of the various effluent releases from the facility, and hence, no basis for a more detailed environmental impact analysis of the releases. For long-term storage, analysis of the existing and anticipated activities at each candidate site and the potential impacts of these activities on the various environmental resources at the site is given under the title *Cumulative Impacts* in Section 4.7 of the PEIS.

09 00 08                      **Comment Number 12**

An evaluation of disposition alternatives was completed for representative sites. These representative sites have been identified for the analysis of the range of environmental consequences. These sites include Hanford, NTS, INEL, Pantex, ORR, and SRS. Additionally, some disposition facilities (specifically those involving the deep borehole complex, generic MOX fuel

since all water for construction and operation of any such facility at Pantex would come from the Ogallala aquifer, just as all water currently used at Pantex comes from Ogallala wells.

\* The accident analysis for various scenarios is seriously understated. For example, the evaluation basis accident in a MOX fuel fabrication facility is a 10-kilogram plutonium source at risk, with less than 1 gram released (p. M-289). Given the inexperience of U.S. workers, the uncertainties about design and handling, the lack of regulatory requirements, and the far larger quantities than 10 kilograms of plutonium that would be in the facility at any given time, a more severe accident scenario with a much larger source term and larger releases must be included. SRIC also does not feel that an adequate basis has been established to exclude several of the "beyond design basis accident scenarios" for a MOX facility (p. M-289). The analysis should be revised to include larger source term amounts and more severe accidents which release larger volumes of plutonium.

Similarly, the same 10-kilogram plutonium source is used for accident scenarios for a plutonium conversion facility (p. M-369). Once again, SRIC does not agree that there is credible analysis to justify exclusion of "beyond evaluation basis" accident scenarios nor that more serious accidents are not credible.

\* The positive environmental and nonproliferation effects of international inspection and other transparency measures are ignored in the draft PEIS. The document says that some of the materials included "may be subject" to bilateral or international inspection (p. 1-5). However, regular international inspection would dramatically increase the confidence of people worldwide regarding the status of surplus weapons-usable fissile materials and that the U.S. is not using such materials for weapons-related activities.

\* It contains no cost estimates and no detailed design information on buildings and facilities. Such information is necessary both to identify reasonable alternatives and their environmental impacts. But that information will not be available to the public until well after the public comment period on the draft PEIS ends. SRIC believes that such information is essential to the public discussion and must be made available with the revised draft PEIS. Indeed, in the Final EIS on Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel, the Department did analyze and compare costs of alternatives. Similarly, in the draft Stockpile Stewardship and Management PEIS, DOE/EIS-0236, February 1996, DOE used cost projections as a major determining factor in assessing alternatives.

16/09.04.04  
cont.

17/09.09.08

18/01.06.00

19/08.00.00

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fabrication, and use of existing or partially completed LWRs) do not lend themselves to specific site analysis at this time. Therefore, generic site characteristics have been developed for environmental evaluations of these facilities. DOE will conduct site-specific tiered NEPA analyses in the future, as required, that will utilize site-specific environmental characteristics before a disposition site is selected. Site-specific environmental analyses for Pu disposition will be addressed in the next tiered NEPA documents.

The National Laboratories, which developed the data reports that were used to develop the environmental impacts related to Pu conversion and MOX fuel facilities, did use previous Pu processing experience. Laboratory experts used their knowledge of the physical, chemical, and radiological properties of Pu to determine potential release fractions during normal and accident situations, and worker and population exposures. This knowledge also included process parameters such as the quantity of the material at risk, process flow rates (for example, the quantity of Pu that could be stabilized or converted into MOX per year), and the number of workers required.

09 11 08

Comment Number 13

The NAS report on the disposition of Pu was used in the screening evaluation process to form the basis for options evaluated for both long-term storage and disposition. The NAS report established a Stored Weapons Standard and Spent Fuel Standard used in the PEIS.

Appendix H of the PEIS provides a comparative analysis of the various Pu waste forms for potential disposal in an NWPA-HLW repository. This analysis includes the thermal characteristics of MOX versus uranium oxide fuel.

09 09 08

Comment Number 14

The event description, probability, source terms, and the human health impacts from the potential accidents for the evolutionary reactors using UO<sub>2</sub> fuels are presented in the PEIS. The similar analysis for the existing, partially completed and evolutionary LWRs with MOX fuels are conducted and included in the PEIS.

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\* It neglects to provide any analysis of the proliferation impacts of the various alternatives considered for the long-term storage of plutonium and highly enriched uranium and the disposition options for plutonium. The proliferation impacts are crucial factors in any decisions to be made regarding these weapons-usable materials and, as such, they must be examined in the PEIS. Once again, DOE is ignoring its own NEPA precedents where proliferation has been a key element in NEPA documents. (Nonproliferation concerns were included in the Final PEIS for Tritium.) Here too, the DOE has failed to consider the issues raised in the 1994 and 1995 NAS studies on plutonium disposition.

20/01.06.00

Further, the possibility of international verification (transparency) and conformity to international safeguards must weigh heavily in DOE's final decisions about storage and disposition. When the environmental impacts, proliferation risks, and the total costs of MOX are fully considered, we believe that the Department would reject that alternative. Since other means to safely handle excess plutonium exist, the proposed use of MOX as a means of plutonium disposition should be flatly rejected as unreasonable.

21/08.03.01

III. Other comments

1. A positive comment is that the metric conversion chart (p. xxvii) and metric prefixes (p. xxviii) are helpful. They should be regularly included in other DOE documents.

22/16.00.00

2. The numerous references cited in the text but not included in the reference list are a significant problem. SRIC had to make several calls to the Office of Fissile Materials and talk with a contractor before being informed that the reference cites were in error. Likewise, numerous references are several years old and obsolete. The fact that more recent analyses are being done and may be included in the final PEIS (as SRIC was informed) is not helpful in analyzing the draft PEIS. Since apparently additional time is needed to complete more up-to-date documents, revising and re-issuing a draft PEIS would allow those more recent documents to be used in the preparation of the draft PEIS.

23/09.00.08

3. Another example of the sloppy work is in the table of contents of Volume 1, which omits more than 100 pages of the document! Section 2.5.2 on Disposition alternatives and its 119 pages is not even listed in the table of contents. And section 2.6, the preferred alternative is listed as being on p. 2-159, when in reality it is page 2-258.

24/16.00.00

4. The draft PEIS should describe the size and subject matter contained in the classified appendix (pp. 4-771, 4-781) so that the interested reader could have a better idea of how essential it is to the overall understanding of the issues relevant to the draft PEIS. If the classified appendix is necessary to gain a

25/10.03.00

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01 00 00

Comment Number 15

The nonproliferation aspects of each alternative evaluated in the PEIS were addressed in a separate nonproliferation analysis issued by DOE in late 1996. If the use of MOX fuel in reactors is selected as the disposition approach, the MOX fuel fabrication plant would be shut down at the completion of the disposition mission. Furthermore, the spent fuel from the use of MOX would not be reprocessed; therefore, residual Pu would not be separated.

09 04 04

Comment Number 16

The statement cited concerns the perched aquifer beneath Pantex. It is correct in noting that no groundwater will be withdrawn from this aquifer. The text in Section 4.3.5.4.4 of the Final PEIS was changed from "near surface aquifer" to the "perched aquifer."

09 09 08

Comment Number 17

The accident scenarios for Pu storage and disposition, including the accident frequency and the source term released to environment, were developed based on the best available information. Although not all potential accidents were addressed, those that were postulated have consequences and risks that are expected to envelop the consequences and risks of an operating facility. Some of the "beyond evaluation basis" accidents were analyzed in the PEIS. It is believed that no other credible accidents with expected frequency of occurrence larger than  $1.0 \times 10^{-7}$  per year are anticipated that will have consequences and risks larger than those described in this PEIS. The background information for the accident scenario development is documented in the respective data reports prepared for the Pu storage and disposition program by National Laboratories.

01 06 00

Comment Number 18

Analysis of the Nonproliferation Policy impacts of all the PEIS alternatives, including international inspection, is presented in a separate document to support DOE's ROD. This document was available for public review in October 1996.

full understanding of the environmental impacts of any alternative, that should also be stated in the draft PEIS.

25/10.03.00  
cont.

5. Since the draft PEIS does not contain preferred alternatives, it should fully describe the criteria that would be used to select such alternatives so that the public could comment on the appropriateness and weighting that should be given.

26/08.03.00

6. While real cost and design information is not available, the draft PEIS is sometimes breathtaking in the precision, without necessary statement of the uncertainties of its analysis. It is certain that the numbers used are wrong, but the document no where states that obvious point. For example, the socioeconomic analysis for Pantex (pages 4-202 to 4-206) makes a number of unqualified, and totally incredible, statements. Even though the actual jobs required for construction and the actual operational jobs are unknown, the draft PEIS includes precise numbers (a range for both direct and indirect jobs would be more technically appropriate). The draft PEIS also contains specific amounts about how the regional economy, including unemployment, would be affected by the upgrade, consolidation, and collocation alternatives. The statements in the draft PEIS are not qualified in any way as to the differing economic characteristics that will certainly exist in the future, the changing job market, technological changes that will affect employment, the fact that large construction projects frequently attract workers whether jobs are in fact available, among many other factors are not stated.

27/09.08.08

7. Even though the draft PEIS is supposed to discuss activities that will happen a decade or more in the future, it frequently ignores that reality. Among other things, it assumes current environmental and economic conditions. It also assumes current permitting requirements, even when permits have a considerably shorter lifetime. For example, the draft PEIS assumes continued open burning and discharges to playas even though those actions are extremely controversial and were contested in the most recent TNRC permits by affected citizens who want to eliminate open burning and discharges to unlined ditches and playas. Moreover, DOE knows that it must look for alternate technologies to phase out open burning and discharges into unlined ditches and playas. However, no alternate scenarios are included in the draft PEIS.

28/09.00.08

IV. These concerns make clear that the Department has much work to do before it can produce even a minimally adequate Draft PEIS on the storage and disposition of weapons-usable fissile materials. Until a revised draft PEIS is issued for public comment, a final PEIS is issued, and a Record of Decision is released, the Department cannot make programmatic decisions regarding long-term storage and disposition of weapons-usable fissile materials.

F-057

08 00 00

Comment Number 19

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.

01 00 00

Comment Number 20

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 beginning in July 1996 for the technical, cost, and schedule analyses and October 1996 for the nonproliferation analysis.

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 create new storage capacity 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.

08 03 01

Comment Number 21

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.

16 00 00

Comment Number 22

Comment noted.

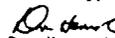
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However, SRIC urges DOE to continue activities which can prepare the Department to make its best possible decisions. We want to be explicit that we do not believe our concerns need to delay the construction of a pilot plant for the immobilization of plutonium wastes by vitrification. Construction of a pilot plant is not programmatic, and therefore does not require NEPA analysis in a programmatic document. Moving forward with a pilot vitrification plant will signal the Department's resolve to disposition plutonium rather than to stockpile it, as well as to address some existing environmental, health, and safety issues.

29/08.03.00

Moving forward will also provide additional information about the particulars of immobilization of plutonium in glass; information that would be useful in preparing an adequate draft PEIS. And, since the Department already realizes that some of its plutonium will not be a candidate for conversion to MOX fuel under any circumstances, construction of a pilot vitrification plant will enable the Department to address at least some of this material in a timely and effective way.

Sincerely,

  
Don Hancock

F-057

09 00 08

**Comment Number 23**

The most current data available was used for the analyses and development of sections in the Draft PEIS prior to its publication. The Final PEIS has been revised to reflect updated data and additional information received since the publication of the Draft. References to this updated information are reflected in the reference chapter of the Final PEIS.

16 00 00

**Comment Number 24**

Comment has been noted. Changes were made to the Table of Contents and are reflected in the Final PEIS.

10 03 00

**Comment Number 25**

The foreword acknowledges the Classified Appendix and includes a brief description of its content. The technical factors discussed in the appendix are classified.

08 03 00

**Comment Number 26**

Between the issuance of the Draft and Final PEIS, DOE has obtained supplemental information from a variety of sources in addition to the environmental analyses. One of these sources is the public. Further information was obtained from technical, cost, schedule, and nonproliferation analyses performed separate from the environmental analysis. The information provided by all of these sources was used to determine the Preferred Alternative and will be integrated into DOE's decisionmaking process. The ROD will describe the basis for the decision.

09 08 08

**Comment Number 27**

The socioeconomic analysis is based on the best available data. DOE National Laboratories have developed manpower estimates for the construction and operation of each of the Proposed Alternatives. Employment multipliers from RIMS II, developed by BEA, are used to estimate total

employment impacts. The approach used in the Draft PEIS is a widely accepted methodology for estimating the potential impacts of public and private sector projects on regional economies. The job estimates are used to determine whether a project can be accommodated in a regional economy without stressing the available labor and housing markets. For Proposed Actions involving downsizing or termination of existing missions, the multipliers are used to estimate total job loss for the affected region.

**09 00 08**

**Comment Number 28**

Future activities in the PEIS are analyzed by projecting and modeling current environmental and economic conditions and data. This analysis does not project current permitting requirements nor postulate possible additional regulatory requirements which may arise that could have an affect on future programs at analyzed sites.

**08 03 00**

**Comment Number 29**

The Department of Energy recognizes the commentor's support for an immobilization pilot plant. However, the need for NEPA analysis of such a pilot plant will be determined dependent upon the disposition alternative selected.

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Date Received: 06/12/96  
Comment ID: P0049  
Name: Don Hancock  
Address:

Transcription:

This is Don Hancock at Southwest Research and Information Center in Albuquerque, New Mexico, my number is (505)262-1862. I have several pages of comments that I wanted to fax in, but this line doesn't seem to work as a fax line even though it was advertised and is included in the cover sheet of the PEIS as being a fax line as well. So, my comment is that it should also be a fax line, and I have faxed my comments to the Office of Fissile Materials Disposition at the 202 number and expect that they'll be fully considered. Thank you very much.

1/08.02.00

P-049

08 02 00

Comment Number 1

Comment noted.

**Comments of  
SOUTHWESTERN PUBLIC SERVICE COMPANY  
Amarillo, Texas  
to  
UNITED STATES DEPARTMENT OF ENERGY**

**Re: Drafts  
Programmatic Environmental Impact Statement  
for Stockpile Stewardship and Management, February 1996**

**Environmental Impact Statement  
for Continued Operation of the Pantex Plant  
and Associated Storage of Nuclear Weapon Components, March 1996**

**and  
Storage and Disposition  
of Weapons-Usable Fissile Materials, February 1996**

**May 7, 1996**

**F-037**

**SOUTHWESTERN PUBLIC SERVICE COMPANY, AMARILLO, TX,  
WILLIAM T. CRENSHAW  
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Southwestern Public Service Company is the investor-owned electric energy provider to the Pantex Plant, near Amarillo, Texas, and to approximately 367,500 other customers (about one million persons) in the Panhandle and South Plains of Texas, eastern and southeastern New Mexico, the Oklahoma Panhandle, and southwestern Kansas. SPS through the past several years has been an attentive and active participant in United States Department of Energy public information/participation activities related to DOE nuclear complex planning.

1. SPS actively supports the interests of Pantex and Pantex employees -- so long as those interests are coincident with protection and improvement of environmental conditions in the Pantex region of influence and with prudent and rational national defense policies and strategies.

2. At this juncture in the proposed and appropriate downsizing of the nuclear complex, we again strongly encourage the Department and Administration to predicate all actions related to the nuclear complex on the conservative assumption that at least rogue-state or terroristic nuclear aggression against the United States is probable.

U.S. vigilance and nuclear preparedness are key to coexistence with mad nations and persons.

In turn, the Pantex Plant is, uniquely, a key to economically efficient continuing nuclear preparedness.

SPS's further comments today on the three major draft environmental impact statements under review intentionally are brief. We forego repetition of comments filed with the Department in the past, and concentrate on issues of particular relevance to appropriate future missions for Pantex:

3. Fundamental to DOE's further consideration of the roles Pantex should play relative to the changing missions of the nuclear complex is the unequivocal recognition that even accumulatively, there would be NO significant adverse environmental impacts from retention and potential expansion of the variety of missions possible for Pantex.

1/08.03.01

The summaries of the relevant draft EISs do not report this fundamental conclusion explicitly; rather, in some instances, the summaries misrepresent that conclusion, reporting, instead, effectively minuscule environmental potentialities that are characterized as "adverse" only because they do not equate to measurable "benefits." We suggest the rote language of EISs should be expanded to recognize effectively neutral outcomes (not merely "beneficial" or "adverse" consequences).

2/09.00.08

However, the underlying draft statements themselves are conclusive in regards to the actual insignificance of "adverse" potential impacts of expanded missions at Pantex. Moreover, DOE and consultant representatives in public meetings in Amarillo publicly and explicitly acknowledged that fundamental conclusion (see, especially, transcript of April 23, 1996, morning discussions).

Because the Department, through its representatives in Amarillo on April 23, committed to highlighting, in the subject Final Environmental Impact Statements, this fundamental and irrefutable conclusion about the actual insignificance of any adverse environmental impacts of increased missions at Pantex, Southwestern will not enumerate and rebut the litany of potential environmental concerns reflected in the EISs.

5. (However, we do request that the Department include in the record "dockets" for these EISs the comments by SPS relative to listed potential environmental concerns recited in the draft Tritium Production-related EIS of 1995.

F-037

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.

09 00 08

Comment Number 2

Based on comments received, the Summary of the Draft PEIS 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.

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In those comments, SPS rebutted the overly sensitive, generally not really site-specific but knee-jerk and ill-informed, and frequently inaccurate characterizations of environmental "concerns" about expanded missions at Pantex. Clearly, those earlier characterizations of possibly "adverse" impacts, especially those related to uses of ground water, now are rejected by DOE. Nonetheless, a replete record supportive of the Department's April 23, 1996, publicly articulated conclusion that NO significant adverse impacts would result, is appropriate.)

2/09.00.08  
cont.

6. Southwestern endorses the Department's "preferred alternative" for continuing assembly, disassembly, and pit reuse functions at Pantex. This "preferred alternative" is environmentally sound, and economically appropriate. Transferring these functions to the Nevada Test Site would be highly questionable in both regards.

7. We strongly encourage the Department to retain high explosives functions at Pantex (rather than relocating those functions to Los Alamos and Lawrence Livermore labs). There would be negative environmental impacts, of course, associated with transfer of those functions to the labs -- impacts related to construction and expansion of the labs' facilities, for instance. Those impacts would not occur at Pantex, where facilities already are available and in use for these very purposes. Additionally, there would be economic waste associated with such transfers; simply put, it would be more expensive -- by DOE's estimate, \$50 million more expensive -- to move the functions than to retain them where they presently are performed.

3/15.00.00

Too, high explosives functions should be retained at Pantex because under the assembly/disassembly preferred alternative, Pantex would be required to continue to have high explosives capabilities sufficient to handle disposition and disposal of current inventories and those anticipated from near-term dismantling --

F-037

15 00 00

**Comment Number 3**

Comment noted. However, this issue is addressed in the Stockpile Stewardship and Management PEIS.

again, retaining the high explosives functions at the present site would eliminate the necessity of duplicating them elsewhere.

Finally, high explosives functions should be retained at Pantex because, should future need arise for new weapons production, it will be critical to have the high explosives facilities at the weapons production/assembly site – which site, demonstrably, should be the Pantex site.

8. The environmental and related socio-economic impacts of new storage and disposition functions at Pantex (as outlined in the Fissile Material programmatic EIS) certainly suggests Pantex in fact is the prime candidate for those functions – especially the storage functions (both those related to reserve weapons grade plutonium and “excess” materials, for which Pantex already has facilities and demonstrated expertise).

1/08.03.01  
cont.

Clearly, the facilities and expertise for storage are existent at Pantex: the site provides storage for over 8,500 pits, and has FONSI (Finding of No Significant Impact) authority to house 12,000 pits. With slight modifications, the site likely could “FONSI-out,” following an environmental assessment for 20,000 pits. Equally clearly, Pantex is well prepared to store some 21.3 metric tons of the 38.2 tons of the nation’s “excess” plutonium – the 21.3 tons are in place at Pantex now. Apparently, only slight expansion would be necessary to securely store the remainder.

Fundamental to this conclusion, too, are the obvious synergies of collocation of assembly/disassembly activities with necessarily attendant, on-site storage.

In fact, as a result of the (altogether appropriate) decision to continue assembly and disassembly at Pantex, all plutonium functions, including storage and

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**SOUTHWESTERN PUBLIC SERVICE COMPANY, AMARILLO, TX,  
WILLIAM T. CRENSHAW  
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disposition, logically flow to Pantex. Incurring extraneous and unnecessary, and high, costs for redundant activities at separate sites would be imprudent.

9. Pantex is the nation's premier nuclear complex production facility; it is imperative that the "production core competencies" presently at the site not be lost or diluted by transfer of management (or production) functions to the labs.

The Department indicates that "stewardship core competencies" must be preserved, perhaps at the laboratories -- and the Department seems to indicate that may mean sacrificing "core production competencies" existent at Pantex. It would make better sense to maintain the stewardship competencies by visits or residency at Pantex, than to lose the production competencies that have evolved there.

Transferring assembly and disassembly functions to any site inexperienced in weapons production and, likely, incapable of significant weapons production, could prove disastrous should the need for an augmented nuclear arsenal arise (or when such need arises). Please, do not eliminate or significantly diminish our nation's most effective weapons production facility's competencies.

Relative to disposition alternatives, Southwestern Public Service Company notes that electric power and energy that could be used in immobilization and vitrification, or in processing for oxide fuel, would be priced very competitively at Pantex. (We refer the Department again to our comments, relative to electric supply and costs, in the Tritium Production EIS inquiry.) We are confident that Southwestern's position as a low-cost producer will encourage the Department to choose Pantex as the most cost-effective site for disposition activities.

10. DOE always should seek the most cost-efficient alternatives for the nuclear complex's operations. Generally, the most cost-efficient alternatives, rather

1/08.03.01  
cont.

related to capital investments, transportation, training, security, energy utilities, etc., will be those available to the nation at Pantex.

1/08.03.01  
cont.

We request -- we are tempted to demand -- that fair and open cost comparisons among the alternative sites for each function be used in analyzing sites, and that such accountings be shared with the publics that have demonstrated interest in the nuclear complex.

4/07.02.00

11. Southwestern must specifically reject the conclusion in the Storage and Disposition draft EIS, under Phaseout, page S-21 (emphasis supplied), as it would apply to the Pantex region of influence: "All of the regional economic areas surrounding the DOE sites would experience a loss in employment with phaseout. However, compared to total employment in these areas, the loss of jobs would have no or negligible impacts at all the DOE sites."

In fact, the impact of Pantex employment in the region of influence is highly significant to the region. Measured in terms of total payroll, Pantex is by far the area's largest employer. The reasonable job multiplier developed by Dr. Ray Perryman at Southern Methodist University, a multiplier of 3.87, applied to the some 3,500 employees at Pantex, suggests the site is responsible for a total of over 13,500 jobs. Employment related to Pantex represents over 12% of the jobs in the Amarillo metropolitan area.

5/09.08.04

Incidentally, the three subject EISs inconsistently analyze the indirect jobs created in the region by Pantex employment: The site EIS assumes 1.65 indirect jobs for each job at Pantex; the stewardship and management EIS assumes 1.16; the storage and disposition EIS, 3.51 (by far, the most consistent with Dr. Perryman's, which is the same, regional-experience-based multiplier employed by the Amarillo Economic Development Commission).

F-037

07 02 00                      **Comment Number 4**

The Department of Energy issued a Technical Summary Report in July 1996 that included cost comparisons of the disposition technologies evaluated in the PEIS. However, the report only provided generic costs for each technology rather than site-specific costs. The differences between sites for a particular technology are relatively small except where existing facilities are available that could be used to offset overall cost. Available facilities were taken into consideration in developing the Preferred Alternative in the Final PEIS and will be considered with other factors in the ROD.

09 08 04                      **Comment Number 5**

Phasing out the storage facilities is the only Proposed Alternative 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.

The number of indirect jobs generated or lost due to the Proposed Alternatives was estimated using the RIMS II model developed by BEA. The employment multipliers used in RIMS II are available for all of the candidate sites and lend consistency to the socioeconomic analyses.

The documents cited evaluate the impacts of different activities which would account for some of the difference in size of multipliers used. For example, this PEIS assesses the impacts of storage alternatives at Pantex, differs from the types of activities assessed in the Stockpile Stewardship and Management PEIS (for example, weapons assembly/disassembly). These activities require different supply and service inputs and rely on different support industries. Therefore, the employment multipliers are likely to be different. The Pantex EIS uses a slightly different methodology and analyzes activities not limited to the Fissile Materials Disposition mission. This difference would account for disparities in the size of multipliers used in the two documents.

**SOUTHWESTERN PUBLIC SERVICE COMPANY, AMARILLO, TX,  
WILLIAM T. CRENSHAW  
PAGE 8 OF 9**

Certainly, we consider a potential 10% to 12% reduction in metro-area employment a major loss, and by no means a "negligible" concern. We strongly urge the Department to correct the socio-economic impact portions of all three EIS documents to accurately reflect the impact of Pantex employment in its region of influence.

5/09.08.04  
cont.

12. Unlike other nuclear complex sites, for instance the notorious Rocky Flats, Hanford, and Savannah River sites, and yes, Los Alamos, Pantex has not had radioactive materials contamination problems. The nuclear complex-related operations at Pantex, in fact, apparently are the best-managed, relative to protection of the environment, in the nuclear complex. Partially to reward the superior, environmentally benign, history of the site, and certainly to capitalize on superior environmental performance, the Department should retain and expand the technically competent operations at Pantex.

1/08.03.01  
cont.

Public support for retention and expansion of the Pantex operations has been nurtured by the facility's performance over many decades. Just as the public here has respected that performance, so should the Department.

Moreover, the Department must surely recognize in the resounding public support Pantex enjoys still further advantages to retention and expansion of the missions at Pantex.

In summary, the criteria for evaluating the alternatives and arriving at the most suitable Record of Decision -- the criteria of environmental impact, cost, and technical feasibility -- support retention and expansion of nuclear complex missions at the nation's premier production site, Pantex Plant.

1/08.03.01  
cont.

F-037

**SOUTHWESTERN PUBLIC SERVICE COMPANY, AMARILLO, TX,  
WILLIAM T. CRENSHAW  
PAGE 9 OF 9**

Southwestern appreciates the opportunity to participate in this important decision making process, and welcomes questions and dialogue, directed to:

William T. Crenshaw  
Environmental Issues Analyst  
Southwestern Public Service Company  
(806) 378-2120

F-037

SPEISER, JOSHUA, 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): Joshua Speiser  
Address (optional): 4811 9th Avenue NE  
Seattle, WA 98108

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.

The BEST OPTION/This should be THE OPTION chosen for  
disposing of weapons-usable Fissile Materials. It is the most protective  
of public and worker health the environment, would create the  
LEAST nuclear waste and have the fewest sublethal impacts  
to the Nation.

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 option sounds too risky to engage and is weighed with  
too many unknowns. Furthermore, the geologic formation chosen  
if this option is selected will remain stable for 29,000+ years  
the 1/2 life of plutonium

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.

The WORST OPTION UNDER ANY CIRCUMSTANCES should be this  
option to choose. This option will be incredibly costly, will produce  
a large volume of NEW HIGH LEVEL NUCLEAR WASTE - plus  
the public worker health and the environment in the greatest peril  
→ Any energy produced in the process is overshadowed by the incredible production  
costs.

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.

This option does nothing to solve the current storage  
dilemma. It also does little to protect the plutonium from  
theft or sabotage. The DOE must ACT, AND NOT "continue  
existing storage practices."

4/08.03.01

M-093

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 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 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.

SPEISER, JOSHUA, SEATTLE, WA  
PAGE 2 OF 2

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

3/08.03.01  
cont.

The MOX fuel option only ~~is~~ <sup>is</sup> ~~discussed~~ <sup>in</sup> ~~the~~ <sup>current</sup>  
planned ~~part~~ <sup>of</sup> ~~our~~ <sup>the</sup> ~~mission~~ <sup>to</sup> ~~is~~ <sup>to</sup> ~~clear~~ <sup>clear</sup>  
MAKE HIGH LEVEL WASTE <sup>is</sup> ~~is~~ ~~discussed~~ <sup>in</sup> ~~the~~ <sup>current</sup> ~~and~~  
taking into ~~the~~ <sup>the</sup> ~~high~~ <sup>level</sup> ~~cost~~ <sup>of</sup> ~~the~~ <sup>these</sup> ~~process~~ <sup>and</sup> ~~and~~ <sup>will</sup>  
ought ~~to~~ <sup>to</sup> ~~enter~~ <sup>into</sup> ~~the~~ <sup>the</sup> ~~program~~ <sup>and</sup> ~~and~~ <sup>will</sup>  
only ~~accept~~ <sup>accept</sup> ~~the~~ <sup>the</sup> ~~burden~~ <sup>burden</sup> ~~the~~ <sup>the</sup> ~~DOE~~ <sup>DOE</sup> ~~and~~ <sup>and</sup> ~~the~~ <sup>the</sup> ~~...~~ <sup>...</sup>

No on the MOX fuel Option!!!

Yes on Verification

M-093

**SPIKE ENTERPRISES AND TABOR GROUP, SAN ANTONIO, TX,  
TADEO ZYWICKI  
PAGE 1 OF 3**

**SPIKE ENTERPRISES  
and  
TABOR GROUP**

The Center for Legal and Social Justice  
2507 N.W. 36th Street  
San Antonio, Texas 78228

Telephone: 210-431-5747 • Facsimile: 210-431-5700

April 29, 1996

TADEO "SPIKE" ZYWICKI

United States Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, DC 20026-3786

Sirs and Madames,

Your responsibility to select the safest measures of our  
Nuclear systems to preserve our nation from dire consequences.

1/08.03.00

A most fundamental need as Water is in danger. The various squarira  
are in danger even to the present generation. How clearly must you  
plan ahead for future dangers and needs.

2/09.04.04

I trust that the work of discovery is going to creative  
thinkers who must of necessity break the mold of past bungling and  
secure us the advanced clear thinking of community Service.

Thank you, Sincerely

*Tadeo Zywicki*  
Tadeo "Spike" Zywicki

{ encl.

M-130

08 03 00

Comment Number 1

Comment noted.

09 04 04

Comment Number 2

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.

## STAND FOR CHILDREN

This is a defining time for our children and for our nation. The choices we make now, as parents, as community leaders, and as citizens, will shape our children's future and our nation's future. On June 1, every American who cares about children must stand up and be counted.

The June 1 Stand for Children will be a day of family and community renewal, celebration, and commitment to children. It will be a day to dedicate ourselves to positive action, as families, citizens, and communities, and as a national community, to do more to make sure that no child is left behind.

4. **Bring a busload to Stand for Children.** Organize a bus or a van or a car convoy to bring your family, friends, neighbors, co-workers, and congregation members to Washington, DC, on June 1. Call 1-800-233-1200 or 202-234-0095, or e-mail us at [standinfo@mailback.com](mailto:standinfo@mailback.com) to receive our Bus Captain's Guide.
5. **Organize a Children's Action Team.** Your team can be as small as four people or as large as four thousand. But your job is still the same: to inspire people to take a Stand for Children on June 1 and strengthen your community's commitment to improving our children's quality of life. Our national staff will work with your Children's Action Team to make sure your efforts are successful. Call us at 1-800-233-1200 or 202-234-0095, or e-mail us at [standinfo@mailback.com](mailto:standinfo@mailback.com) to get started.

Get involved and Make History. We need your energy and commitment. Here's how you can join us:

1. **Come to Washington, DC, on June 1 with your family and friends and take a Stand for Children.**
2. **Spread the word.** The more people who stand together for children on June 1 in Washington, DC, the bigger the impact. So tell 10 friends. Make copies of this flyer and distribute them in places where people go every day -- grocery stores, barber shops, coffee shops, malls. Put an announcement in your congregation's bulletin, your school or organization newsletter, and the local paper.
3. **Volunteer.** Children's Action Teams are forming all over America to help people come together in Washington on June 1. Call or e-mail us to find out what's going on in your area.

STAND FOR CHILDREN can help you get involved. Call 1-800-233-1200 or 202-234-0095, or e-mail us at [standinfo@mailback.com](mailto:standinfo@mailback.com) to find out what's going on in your area or to receive Stand for Children materials.

Here are some of the resources we can provide to help you take a Stand for Children:

Bus Captain's Guide

Posters

Local Event Ideas

Powercards

Publicity Kits

Flyers

Local Fundraising Tips

Badge Cards

Children's Fact Sheets

Celebrity Public Service Announcements

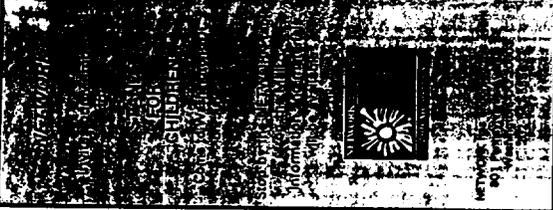
T-shirts and other merchandise will be available at a reasonable cost to help you raise funds for Stand for Children.

STAND  
FOR  
CHILDREN

1832 Connecticut Ave., NW  
Washington, DC 20009  
1-800-233-1200

M-130

SPIKE ENTERPRISES AND TABOR GROUP, SAN ANTONIO, TX,  
TADEO ZYWICKI  
PAGE 3 OF 3



America isn't doing  
enough for our children.

On June 1, we can  
change that.

**STAND  
FOR  
CHILDREN**

June 1, 1996  
Lincoln Memorial  
Washington, DC

This June 1 is a national  
day of commitment  
to American children.

Our children's future  
and our nation's future  
are in our hands.

Every day in America:  
15 children are killed by  
firearms  
2,660 babies are born into  
poverty  
2,833 children drop out of school  
8,493 children are reported  
abused or neglected

America spends:  
12th among 15 nations in math  
achievement of 13  
years-olds  
18th among industrialized coun-  
tries in the percentage  
rich and poor children  
18th in infant mortality  
16th in being standards of our  
poorest children.

**STAND  
FOR  
CHILDREN**

is endorsed by more than  
400 national, state, and local  
organizations, and the list continues to  
grow. For a complete list of endorsing  
organizations, call 1-800-333-1202.

The only night of every year  
that we can  
be in the same place,  
speaking the same language,  
and doing the same thing.

None of the things we need are new.  
We have them all.  
We have the money.  
We have the technology.  
We have the will.  
We have the power.  
We have the people.  
We have the time.  
We have the chance.

Gathering will begin on the Mall at  
10 AM with the  
formal program starting at 1 PM.



M-130

STAND OF AMARILLO, AMARILLO, TX,  
BEVERLY E. C. GATTIS  
PAGE 1 OF 2

Statement of Beverly E.C. Gattis  
President, STAND of Amarillo  
April 22, 1996

Representatives of the Department of Energy are here for the next two days to educate the public about its plans for the future. There are voluminous documents which Panhandle citizens can read, if they so choose, and some of us have at least started that task. I will confess to a growing sense of anger at how deficient those documents are.

The Panhandle stands to be greatly affected by the choices the DOE will make about plutonium storage, processing and disposition, yet citizens are given documents which only talk in generalities about operations which can change Pantex into a plutonium processing site like Rocky Flats.

Pantex could become the site which blends plutonium and uranium together to make nuclear reactor fuel. It could even be the site for a new, experimental nuclear reactor. About none of this can we get sufficient information.

Technical analyses will be available later. Cost analyses will be available later. We do not have access to the information necessary to render an informed opinion, and the Department tells us that is how it will be. For instance, DOE defends the absence of cost information by stating that NEPA does not require a federal agency to supply cost analyses in a draft document. To that, I say "So what." Such information is necessary to the discussion and so must be made available.

The same applies to technical information. It is not possible that the Department has so little information that it can not give a clearer description of what the operations for dismantling pits and processing plutonium will involve. And no citizen should be satisfied with being put in the position of guessing.

All in all, the Department is wasting the time and good efforts of Panhandle citizens who care about their region. It is putting on a show of gathering public comment, but it is withholding information which the public needs and deserves. DOE is managing the public, not empowering it.

The decisions which these documents address are too important for us to allow the Department to go forward in this manner. Whether it is the case that the Department has the missing information yet is not revealing it, or whether the information is not complete, in either instance these draft documents are fundamentally deficient. The public deserves better. The law expects better. And the future must be based on something better.

There is difficult, important work which must be done with plutonium and highly enriched uranium if we are to control the theft of nuclear weapons-useable materials

1/08.00.00

2/13.00.00

TX-061

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.

13 00 00

Comment Number 2

Comment noted. DOE will implement the Proposed Action in compliance with all applicable environmental, safety, and health regulations, and will pursue external regulatory oversight to the extent practicable.

STAND OF AMARILLO, AMARILLO, TX,  
BEVERLY E. C. GATTIS  
PAGE 2 OF 2

and stop the spread of nuclear weapons. Unfortunately, it is the kind of work which has left trouble and contamination every place it has ever been done.

2/13.00.00  
cont.

It is clear that the Department could name Pantex to do some of this processing and disposal work. It is STAND's position that the Panhandle is too valuable to be turned into a plutonium processor, fuel fabricator, nuclear reactor and nuclear waste handling site. But even more, it is STAND's position that no matter where this work is done, this time it must be well planned and executed. STAND will not accept anything less than forthright, complete information and good science for the sake not only of our region, but for the rest of the nation.

3/08.03.01

TX-061

08 03 01

Comment Number 3

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.

STATE OF COLORADO, DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, DENVER, CO, STEVE TARLTON  
PAGE 1 OF 2

STATE OF COLORADO

Ray Bowen, Governor  
Paul Shroyder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4380 Cherry Creek Dr. S.  
Denver, Colorado 80227-1530  
Phone (303) 692-7000

Laboratory Building  
4710 E. 11th Avenue  
Denver, Colorado 80220-1716  
(303) 691-4700



Colorado Department  
of Public Health  
and Environment

May 7, 1996

U.S. Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, D.C. 20024

FAX: 1-800-820-5156

Comments on the Draft PU PEIS

The PEIS approaches risk from a standpoint that DOE has adequate administrative and institutional controls to prevent accidental or catastrophic releases of plutonium or other dangerous materials. Thus, the risk assessments prepared by DOE always conclude that there is no incremental risk from any given action.

In the approximately fifty years of operation at Rocky Flats, two fires breached the containment systems and released plutonium contamination into the environment. At the time of each incident, it was believed that administrative and institutional controls would prevent such an incident.

At Rocky Flats, plutonium and other materials are currently under the most dangerous conditions in the lifetime of the facility. In order to correct these conditions, actions will be taken that are non-routine and difficult to plan adequately. Thus, the overall risk at Rocky Flats will increase due to the uncertainty associated with these actions, and with the worsening conditions of the current storage

The area surrounding Rocky Flats is rapidly shifting from rural use to residential. The impacts of a release from Rocky Flats are significantly magnified over past conditions or the conditions at other DOE sites. Therefore, any alternative that delays the removal of plutonium from Rocky Flats has a significant increase in potential risk to the public.

Furthermore, projected delays in the removal of Rocky Flats plutonium have already impacted Site budgets. Uncertainties in the schedule for decision making and implementation of the PEIS have deflected funds for environmental cleanup and other risk reduction activities into projects related to additional plutonium storage at Rocky Flats. Some PEIS alternatives result in quicker decisions and/or plutonium removal from Rocky Flats, which allows storage funds to be allocated to other risk reduction activities.

1/09.09.07

2/07.00.00

M-174

09 09 07

Comment Number 1

For Pu storage at Rocky Flats, the PEIS analyzes No Action and phaseout of Pu storage at RFETS as part of each of the "action" storage alternatives. Under the No Action Alternative, Pu would continue to be stored at the site in existing facilities. The health risk from potential accidents from these storage facilities is assumed to be the same as the existing conditions, which is analyzed in this PEIS and, in addition, documented in a Safety Analysis Report. For phaseout, the health risk for potential accidents from these storage facilities should be better than the existing conditions.

The Department of Energy is currently pursuing stabilizing and repackaging of weapons-usable fissile materials (including those at RFETS) and placing them in safe, secure storage in accordance with the corrective actions identified in the *Plutonium Vulnerability Management Plan*. The RFETS mission is to transition from a production-dominated site to an environmental restoration, cleanup, and waste management-dominated site. DOE is committed to implementing all actions at RFETS in a safe and environmentally sound manner without delays which could create an increase in potential risk to the public and workers.

07 00 00

Comment Number 2

Comment noted. Decisions for projects related to additional Pu storage at RFETS will be integrated and coordinated with the ROD from this PEIS.

STATE OF COLORADO, DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, DENVER, CO, STEVE TARLTON

PAGE 2 OF 2

*CDPHE Comments  
PU PEIS  
Page 2*

Thank you for the opportunity to comment on the PEIS for Storage and Disposition of Weapons-Usable Fissile Materials. You may direct comments or questions to: Steve Tarlton, Manager, Rocky Flats Program, Colorado Department of Public Health and Environment, 303-692-3015

Sincerely,



Steve Tarlton  
Manager  
Rocky Flats Program

cc: file

M-174



STATE OF FLORIDA  
DEPARTMENT OF COMMUNITY AFFAIRS

EMERGENCY MANAGEMENT • HOUSING AND COMMUNITY DEVELOPMENT • RESOURCE PLANNING AND MANAGEMENT

LAWTON CHILES  
Governor

JAMES F. MURLEY  
Secretary

May 22, 1996

Mr. Bert Stevenson  
U.S. Department of Energy  
Office of Fissile Materials Disposition  
1000 Independence Avenue SW  
Washington, DC 20585-

RE: Nuclear Waste Disposal Siting - Storage and Disposition  
of Weapons - Usable Fissile Materials - Draft  
Programmatic Environmental Impact Statement - Statewide  
SAI: FL9604090228C

Dear Mr. Stevenson:

The Florida State Clearinghouse has received your notification of the above-described project, and has forwarded it to the appropriate state agencies for review. In order to receive comments from all agencies, an additional fifteen days is requested for completion of the review. Therefore, the clearance letter due date for this project will be extended from May 24, 1996, to June 8, 1996. If all comments are received prior to the extended date, every effort will be made to forward the clearance letter to you at an earlier date.

1/08.01.00

Thank you for your understanding. If you have any questions regarding this matter, please contact Ms. Keri Akers, Clearinghouse Coordinator, at (904) 922-5438.

Sincerely,

Ralph Cantral, Executive Director  
Florida Coastal Management Program

RC/cc

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100  
FLORIDA RIVERS AREA OF CRITICAL STATE CONCERN    SOUTH FLORIDA RECOVERY OFFICE    GREEN SWAMP AREA OF CRITICAL STATE CONCERN  
FIELD OFFICE    P.O. Box 4022    FIELD OFFICE  
2796 Overseas Highway, Suite 212    8809 PALM 36th Street    155 East Summerfield  
Mandarin, Florida 32030-2277    Miami, Florida 33155-4022    Bonita, Florida 33030-9411

M-260

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.

STATE OF GEORGIA, DEPARTMENT OF NATURAL RESOURCES,  
 ATLANTA, GA, HAROLD F. REHEIS  
 PAGE 1 OF 1

Georgia Department of Natural Resources

205 Builer St. SE., East Floyd Tower, Atlanta, Georgia 30334  
 Lenise C. Barrett, Commissioner  
 Harold F. Reheis, Director  
 Environmental Protection Division

May 6, 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

Dear Mr. Rudy:

In accordance with DOE public review and comment procedures we have completed an assessment of the Draft Programmatic Environmental Impact Statement on Disposition of Weapons - Usable Fissile Materials (DOE/EIS-0229-D). We appreciate the opportunity to provide input into this important decision.

The draft document contains a number of alternatives for the disposition, storage, and management of surplus plutonium. We note with a great deal of interest that DOE has not chosen a preferred alternative nor a facility for the implementation of a long term solution to the plutonium problem. This means that the Savannah River Site may be a future candidate for deep bore hole disposal or long term storage. Because of the complex geologic and hydrologic conditions at the Savannah River Site and the potential for contamination of groundwater that supplies all of Southeast Georgia, deep bore hole disposal and/or long term storage of plutonium at this facility is unacceptable. There may also be similar environmentally limiting conditions at other DOE facilities in the United States.

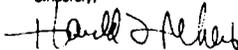
1/08.03.01

Our technical staff has reviewed the alternatives in the Draft Statement and concurs with the National Academy of Science (NAS) recommendation regarding the use of the spent fuel standard. In particular, it appears that a disposal system based on once-through irradiation of mixed oxide fuel in an existing light-water reactor, which is designed to accommodate this type of fuel, best meets the NAS standard. While we recognize that public concern will arise with the selection of any alternative, the use of plutonium in a reactor as fuel represents the best potential for protecting public health and safety in the long term.

2/08.03.01

In conclusion, we appreciate the opportunity to provide comments on this important national issue. We support the selection of an alternative that meets national security objectives in a safe and environmentally sound manner.

Sincerely,



Harold F. Reheis  
 Director

M-161

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.

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.



OFFICE OF THE GOVERNOR

P.O. BOX 83738  
BOISE 83720-0034

PHILIP E. BATT  
GOVERNOR

(208) 334-2100

**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.

ID-002

STATE OF IDAHO, OFFICE OF THE GOVERNOR, BOISE, ID,  
GOVERNOR PHILIP E. BATT

PAGE 2 OF 5

The products under consideration in the Draft Fissile 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 transuranic isotopes with half-lives greater than 20 years per gram of waste.<sup>1</sup> 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 effectuate and fully support this agreement. There was no doubt that the

<sup>1</sup> United States v. Philip E. Batt, Civil No. 91-0054-S-EJL, Oct. 17, 1995, definition section cites "transuranic waste as "defined as set forth in Special Nuclear Fuel EIS, Volume 2, Appendix E.

1/08.03.00

1/08.03.00  
cont.

ID-002

08 03 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. The INEL and five other sites are being evaluated in the PEIS as potential storage sites and as representative sites for disposition alternatives.

Final decisions on materials storage and disposition will be based upon programmatic cost and policy considerations, as well as the environmental analysis. Consistent with efforts to foster the cooperative spirit that DOE wants to see continue to grow out of the agreement with the State of Idaho, DOE will not make final siting decisions regarding the storage or disposition of offsite weapons-usable fissile materials at INEL without first discussing the matter with the State of Idaho.

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.

1/08.03.00  
cont.

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.<sup>3</sup> 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.<sup>3</sup> 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.

2/08.03.01

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.

<sup>3</sup> Department of Energy National Governors' Association handout, "Department of Energy Nuclear Materials and Waste Status and Pending Decisions, March 19, 1996." Relevant graphs attached.

<sup>3</sup> For more information, contact Dave Piszanski, Bureau Chief, Enforcement Bureau, Idaho Division of Environmental Quality, 208-373-0502.

08 03 01

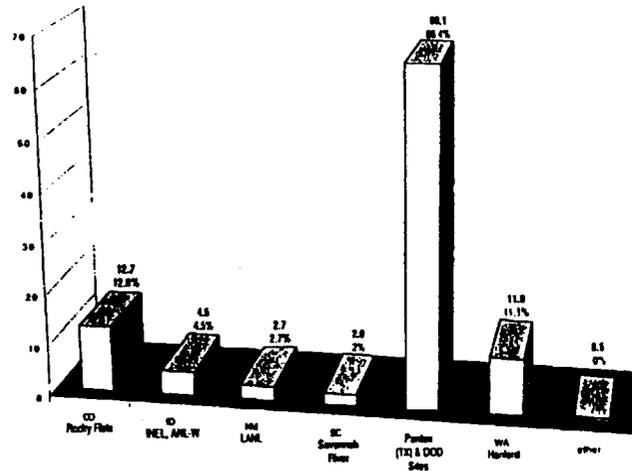
Comment Number 2

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.



## Inventory Summary - Plutonium

(99.5 Metric Tons- MT)



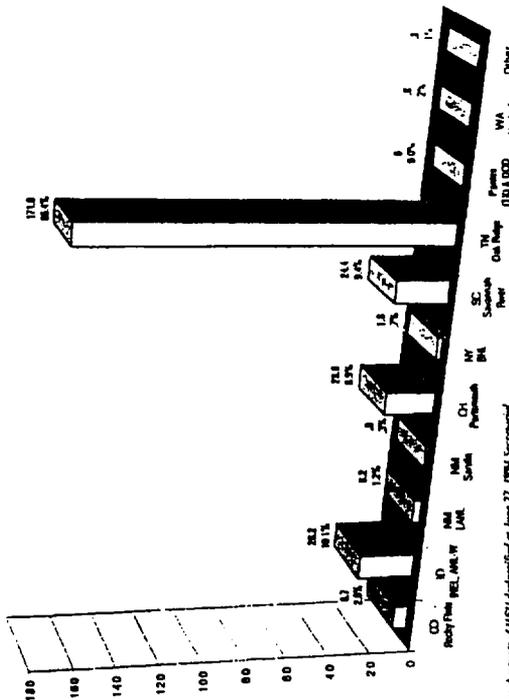
Source: Secretary O'Leary announced on February 6, 1996  
 that the actual inventory of Pu is 99.5 MT

Note: The Pantex (TX) and DOD Sites category includes Plutonium not currently at Pantex. Specific amounts and locations are classified.

ID-002

## Partial Inventory - Highly Enriched Uranium

(258.8 Metric Tons - MT)



Source: Account of HEU disclosed at June 27, 1994 Secretarial Press conference. Does not include classified amounts in inventories. The amounts and locations of HEU at Powers (TX) and (MD) sites are classified. At the February 6, 1996 Press Conference, it was announced that there is 16,781 of HEU at Powers plus plutonium inventories. Not all of the 16,781 is currently at Powers.

ID-002

STATE OF IDAHO, OVERSIGHT PROGRAM, BOISE, ID,  
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State of Idaho

PHILIP E. BATT  
 Governor

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 Coordinator/Administrator

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May 7, 1996

Mr. J. David Nulton  
 Department of Energy  
 Office of Fissile Materials Disposition  
 PO Box 23786  
 Washington, D.C. 20026-3786

RE: State of Idaho Comments on the Draft Storage and Disposition  
 of Weapons-Usable Fissile Materials Programmatic  
 Environmental Impact Statement, DOE/EIS-0229-D

Dear Mr. Nulton:

Thank you for the opportunity to comment on the above referenced document. Our comments are both general and specific. These comments supplement Governor Batt's testimony, which was read into the record at the public meeting in Idaho Falls on April 15, 1996. A copy of this testimony is attached.

GENERAL COMMENTS

The EIS evaluates the INEL as a candidate site for the long-term storage of weapons-usable fissile materials. In general, the INEL is not a suitable location for the long-term storage of these materials.

1/08.03.01

With regard to the storage of weapons-usable fissile materials, the INEL, unlike the other alternative sites, has neither the material handling experience nor a compatible mission. This is evidenced by the small amount of weapons-usable fissile material currently stored at the INEL and the fact that other sites, such as Pantex, have historically managed the nation's nuclear stockpile material.

2/02.00.03

In addition, because most of this material is currently stored at other sites, consolidation at the INEL would require extensive shipping campaigns. Not only would there be numerous shipments to the INEL, but weapons-usable fissile material would have to be shipped back to weapons fabrication sites when needed by the complex. So many shipments of proliferation-sensitive materials would greatly increase the risks of sabotage along transportation routes. Additionally, the large number of shipments required would increase actual and potential environmental impacts from both normal operations and increased accident risks. This in turn would defeat the purpose of the EIS.

3/10.00.00

Investigate • Evaluate • Report

M-182

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.

02 00 03 Comment Number 2

The Department of Energy is considering several sites for the long-term storage of Pu and HEU. The decision on a site or sites will be based upon the results of environmental analyses, information from technical and economic studies, national policy considerations, and public input.

10 00 00 Comment Number 3

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 the 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.

With regard to the disposition of excess plutonium, the State endorses waste management approaches designed to put the excess plutonium into a form that is proliferation-resistant and that can eventually be disposed of in a geologic repository. As such, the State supports the alternatives for fabrication of mixed-oxide fuel and vitrification with high-level waste.

4/08.03.01

As stated in Governor Batt's testimony on this EIS, Idaho considers any plutonium transported to Idaho for long-term storage or disposition to be a transuranic waste. Therefore, any plutonium brought into the State would be subject to the terms of the October 17, 1995 settlement agreement between Idaho and the DOE. Accordingly, transuranic waste brought into the State must be treated within six months and taken out of the State within six months of treatment.

5/08.03.00

Even though the EIS did not evaluate specific sites for the deep borehole alternative, it is worth noting that the INEL would not be a suitable location. The INEL is situated over the Snake River Plain Aquifer, a sole source aquifer that supplies more than half the water used in the State. In addition, the Snake River Plain is volcanically active, with lava flows occurring as recently as 2000 years ago. The borehole alternatives would involve drilling through the aquifer and emplacing plutonium waste in the geologic strata beneath it. Because of the potential for contaminating the aquifer and because the underlying strata is not "...ancient, geologically stable rock..." as specified on page S-13, the State does not consider the INEL to be a reasonable site for such an alternative.

6/08.03.01

7/04.03.00

A final general comment regarding the Draft EIS is the need for more emphasis on pollution prevention and waste minimization. Because these measures reduce the environmental impacts of proposed actions and are required by law, the EIS should recognize and describe what will be done in this regard. It is suggested that the Final EIS contain a section describing pollution prevention and waste minimization techniques that will be adopted for each alternative.

8/09.00.08

**SPECIFIC COMMENTS**

**P. 2-20, PARA. 2**

This paragraph states that ANL-W "is the only INEL facility that currently stores weapons-usable Pu" and lists 4.5 t of Pu at the ZPPR and FMF facilities at ANL-W. "Plutonium: The First 50 Years", DOE, Feb. 1996, lists (p. 20) 4.0 t of Pu at ANL-W and 0.5 t at INEL (including [p. 76] 0.4 t of excess weapons grade Pu at the INEL). This apparent discrepancy should be clarified; is weapons-grade Pu stored at the INEL other than at ANL-W? If so, is all of the excess Pu at ANL-W, or is some of it elsewhere at the INEL?

9/02.01.03

M-182

**08 03 01 Comment Number 4**

The Department of Energy acknowledges the commentator's support for the Reactor Alternatives using MOX fuel and Vitrification Alternatives. 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 00 Comment Number 5**

The Department of Energy acknowledges Governor Batt's position on the settlement agreement and his interpretation of its meaning. Any decision on storage or disposition of weapons-usable fissile materials in Idaho will include consideration of the Settlement Agreement along with the environmental analyses in the PEIS, technical and economic studies, national policy considerations, and public input.

**08 03 01 Comment Number 6**

The Department of Energy recognizes the commentator'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.

**04 03 00 Comment Number 7**

Comment noted.

**09 00 08 Comment Number 8**

Waste minimization is the reduction, to the extent feasible, of radioactive and hazardous waste that is generated before treatment, storage, or disposal of the waste. Pollution prevention fully utilizes source reduction techniques in order to reduce risk to public health, safety, welfare, and the environment, and environmentally sound recycling to achieve these same goals. Each DOE site is required to have a *Waste Minimization and Pollution Prevention Awareness Plan*. To report progress towards their goals in the plan, each site prepares an

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 ROBERT N. FERGUSON  
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|  |             |
|--|-------------|
| <u>P. 3-116 to 3-118</u>   |             |
| A discussion of groundwater contamination at TAN and vadose zone contamination at the RWMC should be added.  | 10/09.04.03 |
| <u>P. 3-140, para. 4; app. J</u>   |             |
| This paragraph regarding spent nuclear fuel (and subsequent paragraphs on high level waste, transuranic waste, and mixed waste) and appendix J should be revised based on the 2/6/96 amendment to the Record of Decision for the Programmatic Spent Nuclear Fuel Management & INEL Environmental Restoration & Waste Management EIS reflecting the settlement agreement with the State of Idaho and the 10/17/95 federal court order.  | 11/09.11.03 |
| <u>P. 4-133 (tab. 4.2.3.2-1); p. F-10 (tab. F.1.2.4-1), p. F-21 (tab. F.1.3-2), p. F-23 (tab. F.1.3-3)</u>   |             |
| Emission rates for SO <sub>2</sub> at INEL show increases (from the no action alternative) of 79 percent for consolidation and 99 percent for collocation, presumably due to potential increased coal combustion, as indicated in tab. 4.2.3.2-1 on p. 4-129. However, modeled 3-hour average ambient SO <sub>2</sub> concentrations show increases of only 18 and 22 percent, respectively (increases for longer averaging times are similar). How is this possible if all emissions were modeled as coming from a single point source, as described in the text accompanying these tables? | 12/09.03.03 |
| <u>P. 4-777 to 4-784 (see also app. G)</u>   |             |
| Only total potential fatalities from transportation activities are presented for each alternative. A breakdown between radiological and non-radiological, and between incident-free and accident scenarios would be useful in reviewing the analysis, in putting radiological impacts in perspective, and in assessing the effect on total predicted fatalities (and the uncertainty thereof) of various input parameters.   | 13/10.02.00 |
| <u>P. G-2, para. 6</u>   |             |
| Please provide references for the rates for nonradiological impacts.   | 14/10.00.00 |
| <u>Appendix M. General comment</u>   |             |
| The final EIS should provide an explanation of the subtitle "Evaluation of Composite Set of Accidents." It is not clear what is actually meant by this category.   | 15/09.09.08 |
| <u>P. M-38, para. 2, line 1; p. M-39 to M-41</u>   |             |
| "Five" should be changed to "nine" to be consistent with the accompanying tables and figure M.2.6-1. Also, NRF is indicated  | 16/09.09.03 |
|  | M-182       |

*Annual Report on Waste Generation and Waste Minimization Progress.* When planning for the construction of facilities by 2010, it will be necessary to consider currently available technology while providing modular, flexible designs that can incorporate process improvements as they become available. In accordance with Executive Orders 12856 and 12873 and DOE policy, the facilities that would support the long-term storage or disposition of weapons-usable fissile materials would be designed for waste minimization with an overall operating philosophy of pollution prevention. This waste minimization program would contribute to decreases in waste treatment, storage, and disposal costs and lower health risks to workers and the public. Technical approaches are being sought to optimize the number of production operations required, increase the use of nonhazardous chemicals and environmentally benign waste-producing chemicals, increase the use of recyclable chemicals and materials, and implement the new design or redesign of existing processes and products. Some criteria useful in determining successful technology include improved processing yield, reduced quantities of scrap, reduced waste and processing of by-products, reduced use of hazardous chemicals, positive return on investment, and continued product quality. This information is contained in Section E.1.3 of the PEIS.

**02 01 03                      Comment Number 9**

The Secretary's briefing states 4.0 t (4.4 tons) of Pu is at ANL-W and 0.5 t (0.55 tons) is at INEL. The PEIS was corrected to indicate that 4.0 t (4.4 tons) of Pu is at ANL-W in the Zero Power Physics Reactor and Fuel Manufacturing Facility (FMF) facilities and 0.5 t (0.55 tons) is at INEL at the ICPP facilities. There are 0.4 t (0.44 tons) of surplus Pu at the ICPP facilities as indicated on Figure 1.1.1-1. The remaining Pu is not considered surplus.

**09 04 03                      Comment Number 10**

A discussion concerning the sources of contamination at these areas and remedial actions for the contaminated groundwater was added to Section 3.4.4 of the Final PEIS.

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as a release point in fig. M.2.6-1 on p. M-41, but no NRF information is included in the tables; why?

16/09.09.03  
cont.

P. M-38, para 1

Why were 1986 meteorological measurements used? More recent GRID III data should have been available.

17/09.09.03

P. M-51, para. 2, line 1; p. M-52 to M-54

"Four" should be changed to "six" to be consistent with the accompanying tables and figure M.2.7-1.

18/09.09.04

P. M-174, tab. M.3.4-43

The exponent or power of 10 is missing from the total hazard index for a worker at 100 meters; it should be "-1."

19/09.10.08

P. M-207, tab. M.3.4-76

The exponent or power of 10 is missing from the total hazard index for a worker at 100 meters; it should be "-5."

20/09.09.08

P. M-227 to M-228

No indication is given on the type of meteorology being used in the MACCS computer code. Does the meteorology meet 95% accident meteorology, and if so, what are the conditions?

21/09.09.08

P. M-228, para 4

The uninvolved worker location is quite a distance (1 km) from the scene of the accidents. Uninvolved workers can be as close as 200 to 300 meters depending on the location of a building in relation to other facility structures. 1000 meters is a distance that could be related to collocation of facilities. Distances in closer proximity for uninvolved worker locations should be used.

P. M-229 to M-276

Source terms released to the environment with up to four or five significant figures for imprecisely defined hypothetical accident scenarios (for example, "146.39 g Pu", last line in tab M.5.2.1.1-1; there are several other similar examples) imply a level of precision that would seem to be difficult to justify. These source terms are probably order of magnitude estimates at best.

22/09.09.08

P. M-321, tab. M.5.3.5.1-5

Accident descriptions need to be provided for some of the postulated accidents listed in this table.

23/09.09.08

M-182

09 11 03

Comment Number 11

The appropriate sections within the PEIS have been revised to reflect the amended ROD that was published on March 8, 1996 (61 FR 9441).

09 03 03

Comment Number 12

Criteria pollutant emissions at INEL, including sulfur dioxide, were modeled from actual stack locations using operating permit data on stack height, stack diameter, exit velocity, and exit temperatures as presented in Section F.1.2.4. The facility emissions for the Consolidation and Collocation Alternatives were modeled from a centrally located single point source.

The pollutant concentrations presented in Table 4.2.3.3-1 were determined based upon the maximum annual average emission case. The emission rates presented in Table F.1.2.4-1 were changed to reflect the maximum annual average emission rates which correspond to the modeled concentrations. The emission rate for sulfur dioxide for the actual annual emission rate is 202,000 kilograms (kg)/yr (445,000 pounds [lb]/yr). The maximum annual average emission rate for sulfur dioxide is 1,700,000 kg/yr (3,880,000 lb/yr).

10 02 00

Comment Number 13

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 risks 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 transportation sections of the PEIS have been clarified to explain that many impacts are neither radiological nor cargo-related. The risk to the public for radiological accidents is an order of magnitude less than either nonradiological accidents or radiological exposures during normal operations.

Comment Documents  
and Responses

STATE OF IDAHO, OVERSIGHT PROGRAM, BOISE, ID,  
 ROBERT N. FERGUSON  
 PAGE 5 OF 10

Should you have any questions regarding the State's comments,  
 please contact Alan Merritt of this office at (208) 528-2600.

Sincerely



Robert N. Ferguson  
 Administrator

enclosure

cc: Ann Dold, Manager  
 Alan Merritt, Environmental Scientist  
 Jerry Downs, Environmental Scientist  
 Richard Durants, Sr. Health Physicist  
 Doug Wells, Radiation Physicist  
 Kathleen Trever, Deputy Attorney General  
 Jeff Schrade, Special Assistant to the Governor  
 Senator Larry Craig  
 Senator Dirk Kempthorne  
 Representative Mike Crapo  
 Representative Helen Chenoweth  
 Delbert Farmer, Chairman, Ft. Hall Business Council  
 Roger Twitchell, DOE-ID NEPA Compliance Officer  
 File- 2.0 NEPA-EIS miscellaneous

M-182

10 00 00                      **Comment Number 14**

Cashwell, J.W., K.S. Neuhauser, P.C. Reardon, and G.W. McNair,  
*Transportation Impacts of the Commercial Radioactive Waste Management  
 Program*, SAND85-2715, U.S. Department of Energy, Sandia National  
 Laboratories, NM, April 1986, pg. 167 (SNL 1986a:167).

09 09 08                      **Comment Number 15**

The "evaluation of composite set of accidents" was included in the Draft PEIS  
 with the intent of providing a more complete understanding of the accident  
 analyses; however, public comments raised issues concerning confusion  
 caused by this information, therefore the "evaluation of composite set of  
 accidents" was deleted in the Final PEIS.

09 09 03                      **Comment Number 16**

The text and tables in the Final PEIS have been modified to reflect the  
 consistent case.

09 09 03                      **Comment Number 17**

At the time the meteorological data was collected at the site, 1986  
 meteorological measurement data was the best available data to use in  
 radiological assessment models. No significant change would be expected  
 even if more current data were used.

09 09 04                      **Comment Number 18**

The text and tables in the Final PEIS have been modified to reflect the  
 consistent case.

09 10 08                      **Comment Number 19**

The numbers are correct in the Final PEIS.



OFFICE OF THE GOVERNOR  
P. O. BOX 80720  
BOISE 83720-0034

PHILIP E. BATT  
GOVERNOR

(200) 324-2100

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 our 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.

M-182

09 09 08

Comment Number 20

The MACCS code used 50-percent meteorology data for accident risk assessment. The reason to choose the 50-percent meteorology data was that no 95-percent data was available for some sites. To be consistent for all sites, the average (about 50 percent) meteorology data was used for all sites.

09 09 08

Comment Number 21

The 1,000-meter (m) (3,281-foot [ft]) distance of a noninvolved worker from the nearest release point of radioactive material is a representative distance which has been used in calculations at all sites. It provides a reasonable reference distance for calculations at both large and small sites. Estimating exposures from a release point at closer distances may not be very accurate because of building effects on dispersion (that is, wake-stream effects).

Also, more detail on how the MACCS code was applied is added to the Final PEIS, Appendix M, and Environmental Impact Methodology sections of Chapter 4. In addition, a topical report for the accident assessments was prepared and added to the current Health Risk Data topical report.

09 09 08

Comment Number 22

In order to provide information to the public and decisionmakers, the human health risk and latent fatal cancers are presented in the 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.

STATE OF IDAHO, OVERSIGHT PROGRAM, BOISE, ID,  
 ROBERT N. FERGUSON  
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The products under consideration in the Draft Fissile 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 FEIS, DOE officials are currently considering several options regarding what to do with these by-products. The draft FEIS 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 transuranic isotopes with half-lives greater than 20 years per gram of waste.<sup>1</sup> 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 effectuate and fully support this agreement. There was no doubt that the

<sup>1</sup> United States v. Philip E. Bar, Civil No. 91-0054-S-BJL, Oct. 17, 1995, definition section cites "transuranic waste as" defined as set forth in Spent Nuclear Fuel EIS, Volume 2, Appendix E.

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Section M.5.1.3.3 has been added in the Final PEIS to describe the methodology and techniques used in the analysis of facility accidents. The accident scenarios were developed to cover the full spectrum of potential accidents. The quantity of material at risk, radionuclide releases, probability of accidents, and input data have been estimated to calculate accident consequences.

For the disposition alternatives the accident descriptions are brief due to the conceptual nature of the design at this time. However, more detailed accident analyses will be included in site-specific tiered NEPA documentation for the disposition alternatives.

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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.<sup>2</sup> 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.<sup>3</sup> 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 comes with 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.

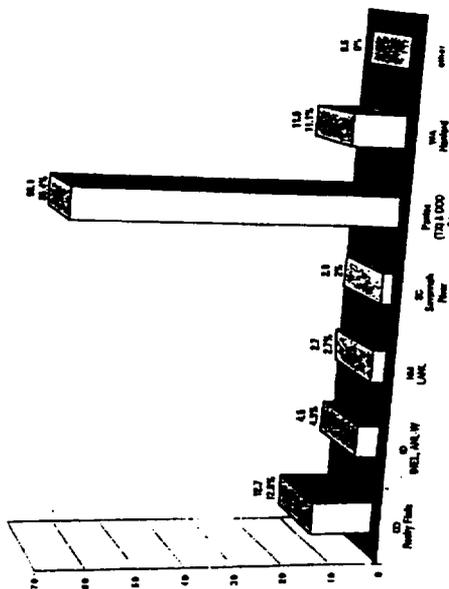
<sup>2</sup> Department of Energy National Government Association handout, "Department of Energy Nuclear Materials and Waste Status and Pending Decisions, March 19, 1996." Redactions graphs attached.

<sup>3</sup> For more information, contact Dave Plankel, Bureau Chief, Enforcement Bureau, Idaho Division of Environmental Quality, 208-373-4587.



## Inventory Summary - Plutonium

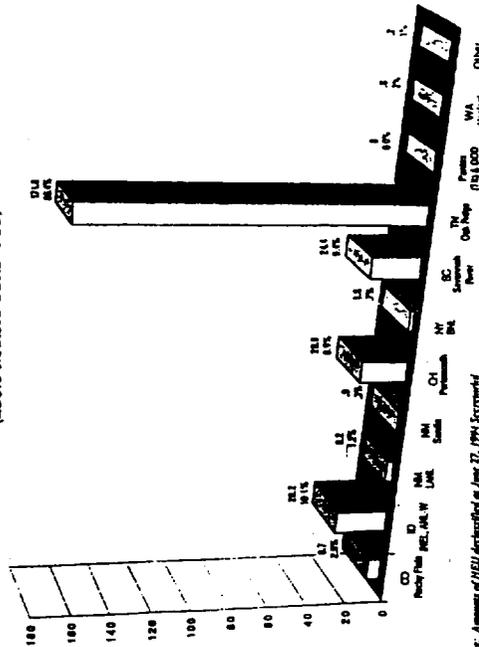
(99.5 Metric Tons - MT)



Source: Secretary of Energy announced on February 6, 1976  
that the actual inventory of Pu is 89.2 MT.  
Note: The Plutonium (Pu) and DOD Stock categories includes Plutonium and materials in process. Specific amounts and locations are classified.

**Partial Inventory -  
Highly Enriched Uranium**

(258.8 Metric Tons-MT)



Source: Accounts of HEU identified as June 27, 1994. Screened for presence of HEU. Data not available for certain states. At the February 8, 1996 Press Conference, it was announced that there is 16,311 of HEU at Power's other physical inventories. Not all of the 16,311 is currently at Power.

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