



## Citizens Advisory Board

Idaho National Engineering and Environmental Laboratory

98-CAB-206

September 16, 1998

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

Dear Sirs:

Enclosed you will find a copy of a recommendation developed by the Idaho National Engineering and Environmental Laboratory Citizens Advisory Board (INEEL CAB). The recommendation was achieved through consensus at the September 1998 meeting of the CAB. It transmits the Board's comments and recommendations to the U.S. Department of Energy on the Draft Environmental Impact Statement (EIS) for Surplus Plutonium Disposition.

It is our intention that our comments and recommendations will help DOE produce a Final EIS that is sufficiently improved to withstand legal challenge and to support the Secretary of Energy's selection of the most appropriate path forward for this important mission of nonproliferation.

We look forward to DOE's response to all of the comments received on the Draft EIS during this comment period. In addition, we would like to receive a copy of the Final EIS along with all supporting documentation (including the *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* document).

Sincerely,

Charles M. Rice  
Chair

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Citizens Advisory Board  
Idaho National Engineering and Environmental Laboratory

Surplus Plutonium Disposition Draft Environmental Impact Statement

The Idaho National Engineering and Environmental Laboratory (INEEL) Citizens Advisory Board (CAB) reviewed the U.S. Department of Energy (DOE)'s Surplus Plutonium Disposition Draft Environmental Impact Statement (EIS), although it was difficult to obtain copies to support our review. We regret that the INEEL CAB was not on the distribution list for the document—despite the fact that we submitted a recommendation addressing the ongoing EIS in the fall of 1997. Our request for copies of the Draft EIS (sent via the DOE's National Environmental Policy Act Internet homepage) similarly did not affect a response.

We submit the following recommendations and comments to support DOE's efforts to develop legally defensible environmental documentation for decision making related to the nonproliferation mission. We recommend that the Department respond to all comments on the Draft EIS received during this comment period in order to ensure that the Final EIS will be able to support a decision by the Secretary of Energy on this important mission.

GENERAL COMMENTS

The INEEL CAB notes that Chapter One of the Surplus Plutonium Disposition Draft EIS includes the following quotation:

"The Record of Decision for the *Storage and Disposition Programmatic Environmental Impact Statement* (PEIS) issued January 14, 1997 outlines DOE's decision to pursue an approach to plutonium disposition that would make surplus weapons-usable plutonium inaccessible and unattractive for weapons use. DOE's disposition strategy, consistent with the preferred alternative analyzed in the *Storage and Disposition* PEIS, allows for both the immobilization of some (and potentially all) of the surplus plutonium and use of some of the surplus plutonium as mixed oxide (MOX) fuel in existing domestic, commercial reactors."

The statement suggests that DOE believes that both approaches would render surplus plutonium (weapons-usable plutonium that has been deemed surplus) inaccessible and unattractive for weapons use, thereby achieving DOE's objectives.

Our analysis of the information presented in the Draft EIS leads us to a conclusion that DOE conducted a less-than-rigorous analysis of the full immobilization alternatives. We note that DOE conducted more extensive analysis for all of the hybrid alternatives (those that would involve implementation of both approaches). This leaves the reader with an impression that DOE decided to pursue the MOX disposition option without the benefit of adequate analysis.

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General SPD EIS and NEPA Process

DOE regrets the difficulties encountered by the INEEL CAB in obtaining copies of the SPD Draft EIS. Copies of the document or an NOA letter were sent to each member of the Board at that person's address on record. This approach was adopted in favor of a bulk mailing directly to the Board's address, which would probably have delayed the receipt of copies by the individual members. (Presumably, someone would have had to forward the documents by mail or wait until the next Board meeting to distribute them.) The public comment period on the SPD Draft EIS was extended from 45 days to 60 days. During this comment period, public hearings were held in areas that would be directly affected by implementation of the alternatives. DOE also accepted comments submitted by various other means: mail, a toll-free telephone and fax line, and the MD Web site. The various channels of communication were open to all interested individuals and organizations, and provided for regional and nationwide comment on the EIS. DOE did consider all comments received after the close of that period. All comments were given equal consideration and responded to.

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Alternatives

DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). The primary objective of the EIS is a comprehensive description of proposed surplus plutonium disposition actions and alternatives and their potential environmental impacts. DOE has analyzed each environmental resource area in a consistent manner across all the alternatives to allow for a fair comparison among the alternatives and among the candidate sites for the proposed surplus plutonium disposition facilities. As discussed in Section 2.1, the disposition facility alternatives, immobilization technology alternatives, and MOX fuel fabrication alternatives evaluated are consistent with the decisions given in the ROD for the *Storage and Disposition PEIS*. Impacts for both technologies and all alternatives are summarized in Chapter 4 of Volume I, and complete analyses are provided in the appendixes. Alternatives 11 and 12, the 50-t (55-tons) immobilization cases, are fully analyzed.

DOE has identified as its preferred alternative the hybrid approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again. Because the Russians have expressed concern that immobilization would not destroy any plutonium, it is conceivable that the Russians would not disposition their surplus plutonium stockpile if the United States were to implement an immobilization-only approach.

Similarly, the INEEL CAB notes that the description of the alternatives is unclear regarding how immobilization would achieve the standards set the National Academy of Sciences. It has not been demonstrated, for example, that high-level waste can be used in the can and canister immobilization method to achieve a radiation barrier. The INEEL CAB recommends that the total immobilization options be given full consideration and rigorous discussion in this EIS. Such an analysis will make the Final EIS less vulnerable to legal challenge and allow the Secretary of Energy greater leeway in selecting the most appropriate path forward for the disposition of surplus plutonium.

The members of the INEEL CAB are divided on whether national and/or international interests would be better served by selection of the total immobilization or the hybrid approach, partly because we lack confidence in the adequacy of the analysis. Improved analysis may reveal that the hybrid approaches will result in greater impacts on the environment, human health, and security. The hybrid alternative could also take a much longer period of time, require more transportation of radioactive materials, and produce greater quantities of wastes. We note that some of the alternatives propose using a 1954 facility for plutonium conversion and immobilization, which could involve permitting challenges that are not adequately addressed in the EIS.

Because our review of the Draft EIS left us without answers to questions about the true impacts of the various alternatives, we concluded that the Draft EIS does not allow comparison of the two approaches, much less comparison of the full range of alternatives. The INEEL CAB recommends that the Final EIS resolve these major issues by conducting additional analysis.

The Draft EIS and presentations by DOE related to the document imply that the international community will not be satisfied with U.S. nonproliferation efforts in the absence of MOX. In light of the fluid political situation in Russia, the INEEL CAB recommends that the assumptions (that the U.S. has no choice but to pursue the MOX alternative in order to ensure that Russia will take reciprocal action) should be periodically confirmed. The INEEL CAB further recommends that implementation of U.S. actions, regardless of which alternative is selected, should proceed concurrently with implementation of comparable actions in Russia.

While the entire INEEL CAB wholeheartedly supports DOE's efforts to achieve nonproliferation objectives and would not argue in favor of a decision that would jeopardize Russian cooperation, the INEEL CAB recommends that DOE base its decisions on complete information and sound analysis. In the spirit of the National Environmental Policy Act, this EIS must document the decision in a publicly defensible manner.

COMMENTS ON THE COST ANALYSIS IN SUPPORT OF SITE SELECTION  
FOR SURPLUS WEAPONS-USABLE PLUTONIUM DISPOSITION DOCUMENT

The INEEL CAB regrets that the cost analysis of the various alternatives presented in the Draft EIS was provided in a separate document that was relatively unavailable. The absence of cost information in the Draft EIS itself leaves the reader to a conclusion that either (1) the costs of implementing the alternatives do not differ or (2) DOE will not consider costs in selecting from the various alternatives. Neither conclusion seems realistic or appropriate. The INEEL CAB recommends the inclusion of more information about costs in the body of the Final EIS.

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DOE Policy

In the *Nonproliferation and Arms Control Assessment Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives* (DOE/NN-0007, January 1997), DOE identified two potential liabilities of the immobilization alternatives relative to the Spent Fuel Standard. These liabilities involve ensuring sufficient radiation levels and removal-resistant can-in-canister designs. Since that time, DOE has modified the can support structure inside the canisters and has focused its research on the ceramic form of immobilization. As part of the form evaluation process, an independent panel of experts determined (*Letter Report of the Immobilization Technology Peer Review Panel*, from Matthew Bunn to Stephen Cochran, LLNL, August 21, 1997) that the can-in-canister design would meet the Spent Fuel Standard. In addition, NAS is currently conducting studies to confirm the ability of the ceramic can-in-canister immobilization approach to meet the Spent Fuel Standard. DOE is confident that immobilization remains a viable alternative for meeting the nonproliferation goals of the surplus plutonium disposition program.

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Alternatives

This SPD EIS identifies and analyzes potential environmental and human health impacts that might result from the construction and normal operation of proposed surplus plutonium disposition facilities. The hybrid approach would produce some additional potential impacts, as described in Chapter 4 of Volume I.

DOE acknowledges the commentator's concern about the preferred approach of using both immobilization and MOX fuel fabrication to disposition surplus plutonium.

DOE eliminated as unreasonable the eight alternatives in the SPD Draft EIS that would involve use of portions of Building 221-F (the 1954 building referred to in the comment) for plutonium conversion and immobilization. It was determined that the amount of space required for the immobilization facility would be significantly larger than originally planned. These new space requirements mean that the Building 221-F alternatives would now be very close in size and environmental impacts to the new immobilization facility

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alternatives at SRS. Therefore, this SPD EIS only presents the alternatives involving a completely new immobilization facility at SRS.

**FD318-5**

**Nonproliferation**

DOE agrees with the commentor's recommendation and has maintained a close working relationship with Russia to develop technical solutions for plutonium disposition. The United States and Russia recently made progress in the management and disposition of plutonium. In late July 1998, Vice President Gore and Russian Prime Minister Sergei Kiriyenko signed a 5-year agreement to provide the scientific and technical basis for decisions concerning how surplus plutonium will be managed. This agreement enables the two countries to explore mutually acceptable strategies for safeguarding and dispositioning surplus plutonium. During the first week of September 1998, Presidents Clinton and Yeltsin held a Moscow summit and signed a statement of principles with the intention of removing approximately 50 t (55 tons) of plutonium from each country's stockpile. Sensitive negotiations between the two countries have indicated that the Russian government accepts the technology of immobilization for low-concentration, plutonium-bearing materials, but that the MOX approach would be considered for higher-purity feed materials. The United States does not currently plan to implement a unilateral program; however, it will retain the option to begin certain surplus plutonium disposition activities in order to encourage the Russians and set an international example.

**FD318-6**

**Cost**

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following

locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

Review of the cost analysis document allows an improved understanding of the costs associated with implementation of the surplus plutonium disposition decision. The INEEL CAB believes the cost analysis is based on a questionable methodology, as it appears that the costs were not fully evaluated. We question why the estimates of total costs do not appear to include certain categories of costs (nuclear reactor modifications and irradiation services, for example) based on an assumption that they will apply uniformly across all alternatives. It is hard to believe that nuclear reactor modifications will be required under the full immobilization alternatives, however. Calculation of fuel offsets and inclusion of those offsets in the estimates of total costs is questionable and the definition of those offsets is not clear, which further complicates the reader's ability to understand the analysis of costs for the various alternatives.

Similarly, we have concerns about the adequacy of cost estimates for immobilization as they are based on less thorough process design and experience than the MOX option. We also noted that they do not include cost estimates for several undetermined aspects of the plutonium ceramic fabrication process. Potentially significant costs that would be required to ensure that the glass product can meet the National Academy of Sciences "spent fuel standard" for making weapons plutonium "sufficiently unattractive to proliferation." Finally, recent developments at the Savannah River Site indicate that it could be significantly more expensive to meet nonproliferation standards using the immobilization approach than with one of the hybrid approaches.

The INEEL CAB recommends that the cost analysis include calculation of all expected costs associated with each of the alternatives—including appropriate offsets (those that result in real reductions in the costs to the U.S. government). The INEEL CAB further recommends an independent review of the cost estimates by competent cost analysts following the suggested recalculation. Improved cost estimates are imperative to support selection of the most appropriate alternative for inclusion in the Record of Decision following completion of the Final EIS.

COMMENTS REGARDING THE SITING OF THE LEAD TEST ASSEMBLY  
FABRICATION AND POST-IRRADIATION EXAMINATION PHASES

If DOE decides to pursue a hybrid approach, review of the analysis of the candidate sites for the lead test assembly phase reveals that Argonne National Laboratory - West (ANL-W) is well qualified. We noted that ANL-W was the only site that did not fall short in at least one of the site selection criteria considered.

With regard to the post-irradiation examination of the lead test assemblies, the INEEL CAB believes that ANL-W is uniquely qualified for conducting the needed examinations. The Hot Fuel Examination Facility has successfully completed similar missions and has appropriate facilities to handle all aspects of the work.

The INEEL CAB recognizes that fabrication of lead test assemblies will involve transportation of plutonium to the INEEL and fabricated fuel rods to the commercial power plant where irradiation will occur. In addition, we recognize that the post-irradiation evaluation phase will involve shipment of irradiated fuel rods to and from the site. The shipments to and from ANL-W, if the facility is selected to conduct either phase, will likely cross the Fort Hall Indian Reservation.

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Cost Report

Because this comment relates directly to the cost analysis report, it has been forwarded to the cost analysis team for consideration. The *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, is available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

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Lead Assemblies

DOE acknowledges the commentator's support for siting lead assembly and postirradiation examination activities at ANL-W. As discussed in Section 2.17, ANL-W was considered as one of several candidate sites because it would require only minimal alteration of interior spaces, is authorized to handle plutonium, and has existing facilities that meet the standards for processing special nuclear material.

As discussed in the revised Section 1.6, based on consideration of capabilities of the candidate sites and input from DCS on the MOX approach, DOE prefers LANL for lead assembly fabrication. LANL is preferred because it already has fuel fabrication facilities that would not require major modifications, and takes advantage of existing infrastructure and staff expertise. Additionally, the surplus plutonium dioxide that would be used to fabricate the lead assemblies would already be in inventory at the site. DOE prefers ORNL for postirradiation examination activities. ORNL has the existing facilities and staff expertise needed to perform postirradiation examination as a matter of its routine activities; no major modifications to facilities or processing capabilities would be required. In addition, ORNL is about 500 km (300 mi) from the reactor site that would irradiate the fuel. Decisions on lead assembly fabrication and postirradiation examination will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

FD318-9

DOE Policy

It is DOE's policy that plutonium shipments comply with DOT and NRC regulatory requirements. The highway routing for commercial shipments of nuclear material is systematically determined using primarily interstate highways and shipments in accordance with appropriate DOT regulations at 49 CFR 171 through 179 and 49 CFR 397. The dates and times that specific transportation routes would be used for special nuclear materials are classified information; however, the number of shipments that would be required, by location, has been included in this SPD EIS.

It is possible that shipments to INEEL or ANL-W could cross the Fort Hall Reservation. The Fort Hall Reservation was contacted by DOE to discuss this issue during October 1998 and in March 1999 but no response has been received to date.

The INEEL CAB recommends that DOE-ID develop an agreement with the Shoshone-Bannock Tribes to allow and appropriately manage the transport of plutonium and other radioactive materials across the reservation. We further recommend that such an agreement be achieved before decisions are made on the siting of the lead test assembly fabrication and the post-irradiation evaluation phases.		10
With regard to the potential siting of both the lead test assembly and the post-irradiation examination phases at ANL-W, the INEEL CAB makes the following recommendations to help ensure that neither will jeopardize compliance with the Idaho Settlement Agreement:		11
1. The INEEL CAB understands that the plutonium involved in both of the phases can meet residence limitations imposed by the Settlement Agreement. We recommend that DOE confirm that interpretation with Governor Batt's office.		
2. The INEEL CAB recommends that the timing and quantities of plutonium shipments to and from ANL-W for the lead test assembly fabrication and the post-irradiation examination phases should be clearly defined in the final EIS.		12
3. The Board recommends that disposition plans should be in place for all waste streams from all activities before the Record of Decision is signed to ensure that the decision will be consistent with the Idaho Settlement Agreement. The Draft EIS reports that the fabrication of lead test assemblies would produce 132 cubic meters of transuranic waste, 736 cubic meters of low-level waste, and 4 cubic meters of mixed low-level waste. No estimates of waste streams produced were included for the post-irradiation examination mission; the final EIS should specify that information. In addition, the INEEL CAB recommends that DOE provide a clear exit path and timetable for all waste streams, as well as residual plutonium, before it enters Idaho if ANL-W is selected for either phase.		13
4. With regard to the disposal of the lead test assemblies after the post-irradiation examination has been completed, how will the irradiated and archived fuel rods be managed and disposed? Will the INEEL be expected to store the rods until Yucca Mountain opens? What will happen if Yucca Mountain doesn't open? The Board recommends that the Final EIS answer these questions.		14
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FD318-10

Transportation

After DOE selects an alternative, a transportation plan (in which State, tribal, and local officials in addition to DOE, the carrier, and other Federal agencies would be involved) would be prepared to address the details of implementing the actions analyzed in this SPD EIS, including prenotification of States. The shipment of nuclear material (e.g., depleted uranium) using commercial carriers would be the subject of detailed transportation plans in which routes and specific processing locations would be discussed. These plans are coordinated with State, tribal, and local officials. The shipment of waste would be in accordance with the decisions reached on the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (WM PEIS) (DOE/EIS-0200-F, May 1997) and the *WIPP Disposal Phase Final Supplemental EIS* (DOE/EIS-0026-S-2, September 1997). The transportation of special nuclear materials is the subject of detailed planning with DOE's Transportation Safeguards Division. The dates and times that specific transportation routes would be used for special nuclear materials are classified information; however, the number of shipments that would be required, by location, has been included in this SPD EIS. Additional details are provided in *Fissile Materials Disposition Program SST/SGT Transportation Estimation* (SAND98-8244, June 1998), which is available on the MD Web site at <http://www.doe-md.com>. Until the decision to use INEEL for any of the surplus plutonium disposition activities is made, it is premature to develop an agreement with the Shoshone-Bannock Tribes.

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DOE Policy

Should the SPD EIS ROD identify ANL-W as the lead assembly fabrication or postirradiation examination site, DOE would consider taking this recommended action. Until then, it is premature to contact the Governor's office, in this regard, although the State of Idaho was provided with the SPD Draft EIS for review and comment. As discussed in Section 2.4.4.4, any postirradiation examination activities and associated material shipments would comply with the Consent Order and Settlement Agreement in *Public Service Company of Colorado v. Batt* (if the work were

performed at ANL–W), and all other applicable agreements and DOE orders, including provisions concerning removal of material from the applicable examination site.

**FD318–12** **Lead Assemblies**

As described in the revised Section 1.6, DOE prefers LANL and ORNL for lead assembly fabrication and postirradiation examination activities, respectively. Therefore, if the preferred alternatives were selected in the decision, shipments to ANL–W would not be made. Table E–25 indicates planned lead assembly operation from 2003 to 2006. The dates and times that specific transportation routes would be used for special nuclear materials are classified information; however, the number of shipments that would be required, by location, has been included in this SPD EIS. Plutonium is routinely and safely transported in the United States every day. All shipments of surplus plutonium other than MOX spent fuel and immobilized plutonium would be made by the DOE SST/SGT system. The transportation analysis results are presented for each alternative in Chapter 4 of Volume I and detailed in Appendix L. As indicated in Section 2.18, no traffic fatalities from nonradiological accidents or LCFs from radiological exposures or vehicle emissions are expected.

**FD318–13** **Waste Management**

If ANL–W were selected, the wastes generated by lead assembly fabrication and postirradiation examination would be managed in accordance with the Batt Agreement, the FFCA Agreement, and decisions made in RODs for the WM PEIS and the *WIPP Disposal Phase Final Supplemental EIS*. As described in Section 4.27.1.2 and Appendix H, wastes generated by lead assembly fabrication could be managed using existing and planned waste management facilities with little impact to these facilities. Section 4.27.6.2 was revised to discuss wastes from postirradiation examination at ANL–W should that site be chosen to provide those services in the SPD EIS ROD.

FD318-14

Waste Management

DOE acknowledges the commentor's concerns regarding spent nuclear fuel management at INEEL. As described in the supporting report, *ANL-WMOX Fuel Lead Assemblies Data Report for the Surplus Plutonium Disposition Environmental Impact Statement* (ORNL/TM-13478, August 1998), unirradiated archived lead assemblies would be managed at the lead assembly facility until lead assembly and postirradiation activities were completed, after which the archives would be shipped to the MOX facility. The bulk of the irradiated lead assembly fuel rods would be stored in the spent fuel pool at McGuire, the reactor where the lead assemblies would be irradiated. Of the rods actually shipped to the postirradiation examination site, one of which is INEEL, some of the wastes from postirradiation examination activities would be considered TRU waste; remaining intact rods and pellets would be managed as spent nuclear fuel. Spent nuclear fuel left over after postirradiation examination would be stored at INEEL until disposed of in a potential geologic repository. This is consistent with the ROD for the *DOE Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final EIS* (DOE/EIS-0203-F, April 1995). The spent nuclear fuel generated by this activity would be a very small fraction of the approximately 1,186,800 kg (2,616,419 lb) of spent nuclear fuel currently stored at ANL-W and INEEL. The small amount of spent fuel generated by postirradiation examination would not drive future decisions on spent nuclear fuel management at INEEL or the potential geologic repository.

The remainder of this comment is addressed in response FD318-11.

COMMENTS ON SURPLUS PLUTONIUM DISPOSITION DEIS August 20, 1998

DOE is to be congratulated on their efforts to incorporate in this DEIS suggestions and answers to various issues raised during earlier public comment periods for the Scoping and Storage & Disposition PEIS.

There are, however, some salient points that need to be made or emphasized at this time:

1. World peace is extremely questionable with the current potential for proliferation of nuclear weapon materials. Thus, disposition of surplus plutonium by both the U.S. and Russia is of immediate importance.
2. Russia intends to utilize their surplus as MOX (Mixed Oxide) nuclear fuel for power production. The U.S. should likewise be using their pure plutonium for energy production with MOX fuel elements. There is ample information available on MOX from the 1970's to the present. After use in nuclear reactors, it would be thus be rendered equivalent to other Spent Nuclear Fuels. Only the plutonium too impure for either weapon or MOX fuel should be immobilized for burial.
3. It was unfortunate that INEEL was not selected for a new peaceful mission to convert nuclear weapon materials to peaceful energy purposes. The Idaho Falls Scoping meeting was the first and only hearing that was of a technically objective format instead of the 'we want it for jobs and economics' hearings. We are unhappy that DOE has already selected Savannah River as the preferred site for MOX production, rather than awaiting the Record of Decision following the Final Environmental Impact Statement. WIPP might then be open to receive Rocky Flats waste now stored at INEEL. This would then show that the 'Settlement Agreement on Nuclear Wastes' is working so that our political leaders and the public could support new projects at INEEL.
4. DOE's choice of Savannah River as the preferred site for MOX production was not based on any environmental issues at INEEL. The DEIS states (under Cumulative Impacts): "INEEL is currently in compliance with all Federal, State and local air quality regulations and guidelines, and would continue to remain in compliance even with consideration of the cumulative effects of all activities. The surplus plutonium disposition facilities contribution to overall site concentration is extremely small." In this EIS, DOE must answer all concerns of independent oversight advisers (State of Idaho) and stakeholders (Citizens Advisory Board) to assure acceptability of any future nuclear projects.
5. DOE's preference for siting plutonium disposition states: "DOE prefers that INEEL should focus on cleanup and nuclear technology". One example of 'nuclear technology' would be for DOE to choose Argonne-West as the site to make the lead assemblies and do post-irradiation examination if required for NRC licensing of MOX. Based on their superior equipment and expertise, we support Argonne-West for this work. We are encouraged that some of our nation's leaders are now recognizing the need for future additional environmentally-clean nuclear power, and feel sure that INEEL should and will play an important part.

*Lowell A. Jobe*  
Lowell A. Jobe  
Coalition 21

IDD04

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Nonproliferation

DOE agrees with the commentator's view that surplus plutonium disposition by both the United States and Russia is of immediate importance to world peace and appreciates the support for the hybrid approach. The SPD EIS analyses include those materials suitable for immobilization and those suitable for MOX fuel fabrication. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself.

IDD04-2

DOE Policy

DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). In accordance with 40 CFR 1502.14(e), the agency shall identify its preferred alternative, if one or more exists, in the draft EIS and identify such alternative in the final EIS. DOE identified the preferred alternative, as required, so the public could understand DOE's orientation and provide comment. Decisions on the surplus plutonium disposition program at INEEL will be based on public input, environmental analyses, technical and cost reports, and national policy and nonproliferation considerations. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

IDD04-3

General SPD EIS and NEPA Process

Section 2.18 provides a summary of the potential environmental impacts from each alternative. The Comment Response Document provides responses to the comments on the SPD Draft EIS received from independent oversight organizations and the public.

IDD04-4

Lead Assemblies

DOE acknowledges the commentator's support for siting lead assembly and postirradiation examination activities at ANL-W. As discussed in Section 2.17, ANL-W was considered as one of several candidate sites because it would require only minimal alteration of interior spaces, is authorized to handle plutonium, and has existing facilities that meet the standards for processing special nuclear material.



As discussed in the revised Section 1.6, based on consideration of capabilities of the candidate sites and input from DCS on the MOX approach, DOE prefers LANL for lead assembly fabrication. LANL is preferred because it already has fuel fabrication facilities that would not require major modifications, and takes advantage of existing infrastructure and staff expertise. Additionally, the surplus plutonium dioxide that would be used to fabricate the lead assemblies would already be in inventory at the site. DOE prefers ORNL for postirradiation examination activities. ORNL has the existing facilities and staff expertise needed to perform postirradiation examination as a matter of its routine activities; no major modifications to facilities or processing capabilities would be required. In addition, ORNL is about 500 km (300 mi) from the reactor site that would irradiate the fuel. Decisions on lead assembly fabrication and postirradiation examination will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

This is Lowell Jobe of Coalition 21. Our phone number is (208) 528-2161. We also have a fax 528-2199. I am asking whether there is going to be an extension on the comment period for this Plutonium Disposition DEIS. We are really tied up with many DOE related meetings here this week and it's going to be difficult to get a real meaningful comment to you. So, I noticed that there was an extension given on the advanced mixed waste treatment plan according to last Saturday's paper. And I'm hoping this will be also an extension on this. I know that the Citizen's Advisory Board is meeting today, Monday the 14th and tomorrow and this plutonium disposition is also on their agenda and I intend to be at their meeting.

1

PD046

**PD046-1** **General SPD EIS and NEPA Process**  
A period of 60 days was allowed for public comment on the SPD Draft EIS, and DOE accepted comments submitted by various means: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Although it did not extend the comment period, DOE did consider all comments received after the close of that period. All comments were given equal consideration and responded to.



Supporting Tomorrow's Technologies With Facts + Not Fears!  
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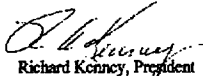
September 16, 1998

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

Subject: Additional Comments on Surplus Plutonium Disposition DEIS

The following comments supplement those submitted by Coalition 21 on September 15.

- |   |   |
|---|---|
| 1. Coalition 21 has just completed the attached summary on the risks of plutonium. We request that it be included in the public comment record for this EIS. We ask that DOE address the accuracy of each paragraph in the summary.   | 1 |
| 2. We also wish DOE to consider applicable parts of this summary as the framework of its own summary on plutonium risks to be included in the final EIS. Much misinformation about plutonium resides with the general public. DOE should use this EIS and every other appropriate opportunity to put the risks of plutonium into proper perspective for its stakeholders. | 2 |
| 3. We have also submitted the plutonium risk summary for the public comment record for the EIS on the Advanced Mixed Waste Treatment Project. This DEIS is out for public comment by the Idaho Office of DOE. Please ensure that DOE's responses to the summary are consistent between the two EIS's.   | 3 |

  
Richard Kenney, President

Attachment (4 pages)

Visit our Internet site! [www.coalition21.org](http://www.coalition21.org)

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Send us E-mail! [facts@coalition21.org](mailto:facts@coalition21.org)

MD240

MD240-1

Human Health Risk

DOE acknowledges the views expressed in the commentor's summary which is included in the public record as part of the SPD EIS. The comments on the SPD Draft EIS have been reviewed and acknowledged by DOE as shown in the following responses. The scope of this comment response process, however, focuses on the issues and alternatives related to this SPD EIS.

MD240-2

Human Health Risk

DOE acknowledges that there is misinformation about plutonium among the public. It has established reading rooms near DOE sites to provide easy access to information about DOE programs and encourages the use of this source of information. DOE has numerous Web sites, including the MD Web site at <http://www.doe-md.com>, that also provide up-to-date information about DOE programs.

MD240-3

General SPD EIS and NEPA Process

This comment is addressed in response MD240-1.

THE RISKS OF PLUTONIUM

September 1998

Most of us recognize carbon dioxide as vital to our environment to make plants thrive. People who follow the global warming debate know that too much carbon dioxide might add to the risks of global warming. Until July 1998, few people in Eastern Idaho were aware that a single lungful of this very common gas in our atmosphere could result in death. Yet that's what happened to an employee at INEEL. Thus risks from even extremely common materials are not obvious.

Plutonium is a man-made material whose origin is linked to nuclear bombs. Like many man-made materials, including most chemicals, it can be both beneficial and potentially harmful. It has raised genuine concerns in the general public. Coalition 21 believes that some groups are opposed to nuclear benefits in any form. We recognize that some such groups deliberately fuel the genuine concerns with a campaign of misinformation.

The challenge in that climate is to describe plutonium risks in two two-sided sheets of valid and interesting information. (We concluded at once that one sheet is not enough). We must make this information factual and subject to a minimum of debate. We'll meet this challenge by addressing the most common concerns, allegations, and claims.

***Allegation:*** Plutonium is the most dangerous material known to man. That statement originated during World War II. Then plutonium was being made for the atomic bomb dropped on Nagasaki. Those responsible for plutonium worker safety wanted to make sure that this new material was not handled carelessly. Since then this now publicly disproved statement has derived its only authority from constant repetition. Experts in industrial hygiene do not support it.

A number of chemical and biological agents, such as nerve gases and botulism, are fatal to man in much smaller quantities. Even common materials such as caffeine, carbon dioxide, cyanides, lead and arsenic are, at times, more hazardous poisons.

The risk of plutonium differs from that of these other materials. Its chemical toxicity is inconsequential. Its primary hazard comes from its radioactivity if it is somehow taken into one's body. Our skin helps to protect us from this radioactivity. The danger arises from a radiation dose delivered to various organs inside the body. In general, plutonium that is inhaled is far more hazardous than plutonium that is swallowed. It is more readily absorbed into the blood stream via the lungs than via the G. I. tract. (For readers needing numbers, see the end of this fact sheet). Nevertheless, nobody is known to have died from a disease that indisputably developed from contamination with plutonium.

***Concern:*** Plutonium is poisoning the Snake River Plain Aquifer. Or "plutonium is conceivably a health risk to those drawing water from the aquifer beyond the INEEL."

Between 1954 and 1970 waste shipped in from the nuclear weapons plant at Rocky Flats was buried in about a dozen acres at the INEEL. These locations are about 500 feet above the aquifer. This industrial-type waste contains an estimated several thousand pounds of

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plutonium. Debate continues about the movement of traces of the buried plutonium downward through the 500 feet of soil toward the aquifer. Diversion dikes are preventing the repetition of past surface flooding of the burial site. This step should lessen the likelihood of further plutonium movement in the soil.

Digging up plutonium waste in Pit 9, and the soil immediately below it, will help in making future decisions. Cost and the risk of industrial accidents may not justify digging up the rest of the waste. Even if all the buried waste were dug up, the soil cannot be totally cleaned of plutonium contamination. Quantities of soil that are judged environmentally safe will need to be reburied.

Even if small quantities of plutonium reach the aquifer, they will most likely be filtered out before they reach any human. The properties of plutonium minimize its buildup in water. Its most common chemical compound, plutonium oxide, is less soluble than sand. Water does not easily dissolve or carry plutonium, a heavy metal.

Wastewater from some INEEL facilities was injected directly into the aquifer from 1953 until 1986. This wastewater contained very small quantities of plutonium. The quantities are only slightly more than can be attributed to fallout from nuclear weapons testing. Regulations apply to contaminants of water supplies. The Environmental Protection Agency has applicable drinking water standards. For plutonium, the injected water met all drinking water standards, both State and federal.

The trace quantities of plutonium move much slower than the water. Since 1953, water from the injection wells has moved in the aquifer an average of at least 20 miles in a southwesterly direction. Yet plutonium in barely detectable amounts has reached less than a half-mile from the injection wells. Thus plutonium is nowhere near the southern INEEL boundary.

***Allegation:*** Inhaling one particle of plutonium can cause lung cancer. Plutonium has not been the identified cause of any cancer deaths in the U. S. Some workers who handled plutonium during World War II accidentally inhaled significant quantities. Doctors monitored one group of these workers regularly. Decades later the workers' rate of lung cancer was no greater than in the rest of American society.

Inhaled plutonium particles above a certain size do not reach the lungs. A person would need to inhale nearly one million of the largest particles reaching the lungs to become an eventual victim of lung cancer. A continuing concern expressed at public meetings is that the so-called HEPA filters used by industry to filter out extremely small plutonium particles are not as efficient as claimed. In this size range the number of particles that would cause a lung cancer, if inhaled by a person, is a billion or more.

***Claim:*** A sheet of paper can stop radiation from plutonium. Essentially all radiation emitted by plutonium is of very low energy. The thickness of the human skin can therefore prevent radiation damage to the rest of the body. Plutonium can emit other forms of radiation with higher energy. However, their intensity is low and they do not

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present great dangers. Nevertheless they are a factor, now that the amount of rad permitted for industrial workers has become more conservative. A plutonium-fa plant built in Germany, but never operated, is a monument to this increased conservatism.

***Allegation:*** Plutonium makes a nuclear reactor accident much worse. All nuclear power plants that make electricity produce plutonium. For a typical U.S. plant, this plutonium generates about one-third of the total energy output. It is under controlled conditions. Under accident conditions, the reactor could be sufficiently damaged to result in the release of harmful radioactivity. The main threat would not be airborne plutonium. The accident at Three Mile Island in Pennsylvania dispersed no plutonium. Only a small amount was released during the much more severe accident at Chernobyl. Under no circumstances could a reactor explode like a nuclear bomb.

***Concern:*** Plutonium from peaceful uses can be diverted to nuclear bombs. Each commercial nuclear power plant discharges once-used fuel each year containing several hundred pounds of plutonium. The U. S. does not attempt to recover the plutonium from the highly radioactive fuel. Other countries are recovering plutonium.

The recovery process is technically quite difficult. It is not realistic for terrorists. It requires a major national commitment in resources. Therefore the Russians and the U. S. are talking about including our excess weapons plutonium in fuel for power reactors. Not only would some bomb material be used up in producing energy, but also the remainder would be hard to recover after use in a reactor.

The countries that do recover plutonium from reactor fuel believe they account for the plutonium very carefully. Reactor plutonium is much less pure than weapons material. A very crude and inefficient nuclear bomb could be made from reactor plutonium at great risk to the producer.

***Allegation:*** Plutonium can neither be transported nor disposed safely. No one anywhere in the world has been injured by radiation from shipments of nuclear materials. Plutonium, as nuclear weapons material, has been sent around the country for fifty years without a serious accident. Likewise shipments of used fuel from the nuclear Navy and from foreign reactors have had no serious accidents. The used fuels have operated successfully at much higher temperatures than the temperatures in the shipping containers. The containers are heavy, lead-shielded casks. They have been tested under very severe simulated accident conditions and proven safe.

The main form of plutonium loses its radioactivity very slowly. To lose it all will take about 200,000 years. (Remember that poisons like arsenic never lose their toxicity.) The EPA has approved the Waste Isolation Pilot Plant (WIPP) for storage/disposal of plutonium-contaminated waste generated by the nuclear weapons program. The State of New Mexico is challenging that decision. Their concern seems to center not around the plutonium, but around the hazardous organic solvents also in the waste.

MD240

The U. S. is intending to dispose of once-used nuclear fuel containing plutonium at Yucca Mountain in Nevada. The government has not yet certified that facility as safe for this disposal. One reason that other countries recover the plutonium from nuclear fuel is to lessen the amount of material that needs such extraordinarily long safe storage. With the plutonium and other fuel materials removed, the resulting nuclear waste loses its radioactivity in about 500 years. The ability to build storage facilities that have lasted that long dates back to the Egyptians. Witness their pyramids.

In summary, since its discovery, plutonium has been intensively studied. Its qualities are better understood than many common industrial materials. It must be handled carefully, like any other useful but potentially harmful material. It has been generally used safely. The processes for handling it have continued to become more conservative. Members of Coalition 21 believe that the plutonium risks to the general public in Idaho are minimal. In our opinion, these risks can continue to be adequately managed.

For those wanting numbers: Inhalation risk: Swallowing an estimated 500 milligrams of plutonium will cause acute fatal damage to the GI tract. That amount is 50% more than an adult aspirin weighing 325 milligrams. Inhaling 20 milligrams of plutonium dust of optimal particle size will cause death in about a month due to lung damage.

Inhaling one-tenth of a milligram of plutonium will eventually cause fatal lung cancer. The largest particle of plutonium that can be readily inhaled is about 3 micrometers in diameter. (The diameter of the human hair is up to 20 times greater.) It would require 700,000 of these particles to make 0.1 milligrams. Reducing the diameter of the average particle to 0.2 micrometer decreases its volume by 3500. This reduction in size increases the potentially fatal number of particles (in 0.1 milligrams) to over 2 billion.

Plutonium in water: Measurements of plutonium traces in natural waters have been made in many places around the world. Water in contact with sediments (soils) dissolves only about one part in 10,000 to 100,000 of the plutonium in the adjacent sediment.

Plutonium forms and radioactivity: Pu-239 is the main form of plutonium, both in weapons and in a less pure state in reactor fuel. This plutonium isotope has a half-life of 23,400 years. (Half-life means the time to lose half of its remaining radioactivity). At most, ten half-lives are needed for essentially all radioactivity to disappear. Reactor fuel contains other plutonium isotopes with much shorter half-lives. The shorter half-life make them and the reactor fuel much more radioactive than weapons-grade plutonium.

References: Furnished on request.

Coalition 21 is an all-volunteer group supporting the beneficial uses of nuclear technology. You may write us with your comments on this summary at P. O. Box 51232, Idaho Falls, Idaho 83404. The email address is facts@coalition21.com.

George Freund prepared this summary. Reviewers included Coalition 21 members Jack Barracough, John Commander, Steve Herring, Marty Huebner, and Dick Kenney.



Supporting Tomorrow's Technologies With Facts + Not Fears  
P.O. Box 51232 • Idaho Falls, Idaho 83405 • 208-528-2181 • FAX: 528-2191

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

COMMENTS ON SURPLUS PLUTONIUM DISPOSITION DEIS Sept. 15, 1998

DOE is to be congratulated on their efforts to incorporate in this DEIS suggestions and answers to various issues raised during earlier public comment periods for the Scoping and Storage & Disposition PEIS. There remain, however, some points about which we wish to comment or question:

1. World peace is extremely questionable with the current potential for proliferation of nuclear weapon materials. Thus, disposition of surplus plutonium by both the U.S. and Russia is of immediate importance. Russia intends to utilize their surplus as MOX (Mixed Oxide) nuclear fuel for power production. The U.S. should likewise be using their pure plutonium for energy production with MOX fuel elements. There is ample information available on MOX from the 1970's to the present. We strongly feel that only the plutonium too impure for either weapon or MOX fuel should be immobilized for burial.
2. We are unhappy that DOE has already selected Savannah River as the preferred site for MOX production, rather than awaiting the Record of Decision following the Final Environmental Impact Statement. WIPP might then be open to receive Rocky Flats waste now stored at INEEL. This would then show that the 'Settlement Agreement on Nuclear Wastes' is working, so that our political leaders and the public could actively support new projects at INEEL.
3. DOE's choice of Savannah River as the preferred site for MOX production was not based on any environmental issues at INEEL. We feel that DOE should clearly state that environmental impacts of the MOX project at INEEL would be extremely small and were not a basis of their preference of SRS for the Plutonium MOX Fuel Fabrication Facility.
4. Pantex was included as a possible site for the pit disassembly and conversion facility. This is logical since most of the MOX plutonium (as pits) is located there. The non-weapon plutonium oxide presents no different proliferation concern if it were to be shipped to INEEL.
5. Transportation distances to move plutonium oxide from Pantex would be essentially the same to INEEL as to SRS. Therefore, shipment to INEEL would not constitute any additional and unnecessary transportation, as claimed by DOE.
6. The plutonium too impure for MOX fabrication can logically be shipped directly to SRS for immobilization.

MD240

MD240-4

Nonproliferation

DOE agrees with the commentator's view that surplus plutonium disposition by both the United States and Russia is of immediate importance to world peace and appreciates the support for the hybrid approach. The SPD EIS analyses include those materials suitable for immobilization and those suitable for MOX fuel fabrication. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself.

MD240-5

Alternatives

DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). In accordance with 40 CFR 1502.14(e), the agency shall identify its preferred alternative, if one or more exists, in the draft EIS and identify such alternative in the final EIS. DOE identified the preferred alternative, as required, so the public could understand DOE's orientation and provide comment. Decisions on the surplus plutonium disposition program at INEEL will be based on public input, environmental analyses, technical and cost reports, and national policy and nonproliferation considerations. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

MD240-6

Alternatives

As indicated in Section 1.6, SRS is preferred for the MOX facility because this activity complements existing missions and takes advantage of existing infrastructure and staff expertise. DOE prefers that INEEL focus on cleanup and nuclear technology. Environmental impact analyses of the proposed surplus disposition actions discussed in Chapter 4 of Volume I show that the potential impacts of the proposed actions during routine operations are small for all DOE candidate sites.



MD240-7

Alternatives

Proliferation issues associated with the transportation of plutonium dioxide from a pit conversion facility at Pantex to a MOX facility at either INEEL or SRS would not be the only discriminating factor for selection between INEEL and SRS for the MOX facility. As indicated in the revised Section 1.6, SRS is preferred for the proposed surplus plutonium disposition facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

MD240-8

Alternatives

DOE assumes that the commentor’s suggestion is to locate the pit conversion facility at Pantex, the immobilization facility at either Hanford or SRS, and the MOX facility at INEEL. Transportation of pits from Pantex to INEEL rather than SRS may not involve additional, unnecessary transportation, but this arrangement would locate each of the proposed facilities at a different site. Section 2.3.1 of the SPD Draft EIS explained that a range of 23 reasonable alternatives remained after evaluating over 64 options against three screening criteria: worker and public exposure to radiation, proliferation concerns due to transportation of materials, and infrastructure cost. These 23 reasonable alternatives were evaluated in the SPD Draft EIS. After the Draft was issued, DOE eliminated as unreasonable the 8 alternatives that would involve use of portions of Building 221-F with a new annex at SRS for plutonium conversion and immobilization, thereby reducing the number of reasonable alternatives to the 15 that are analyzed in the SPD Final EIS. Options that placed each of the three facilities at a different site were eliminated as unreasonable.

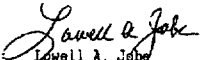
MD240-9

Alternatives

Most of the plutonium that would be immobilized under the hybrid alternatives would be sent directly to the immobilization facility for conversion to plutonium dioxide, followed by immobilization. SRS has been announced as the preferred site for all three proposed surplus plutonium disposition facilities; therefore, all the surplus plutonium would be transferred to SRS for processing should SRS be selected.

- |   |    |
|---|----|
| 7. The combination of items 4, 5, and 6 would make a logical alternative that should have been considered by DOE. An explanation of why it wasn't would be in order.  | 10 |
| 8. No reasons were stated in the DEIS for DOE's preference for siting MOX Fuel Fabrication at SRS beyond stating "DOE .....prefers similarly that INEEL should focus on cleanup and nuclear technology". We believe that the MOX project belongs in the 'nuclear technology' focus specified for INEEL. A MOX Fuel Fabrication Facility at INEEL could then continue the peaceful nuclear power technology that had its roots at INEEL.   | 11 |
| 9. A major example of 'nuclear technology' would be for DOE to choose Argonne-West as the site to make the lead assemblies and do post-irradiation examination if required for NRC licensing of MOX. Based on their superior equipment and expertise, we support Argonne-West for this work.  | 12 |
| 10. In answer to many commentators (including ourselves) for the need to analyze total costs of each alternative, DOE prepared a separate cost study (DOE/MD 0009) that will be considered, along with the SPD EIS analysis, in the decisionmaking process. This ROD must consider the cost results of that study and, at least, state that INEEL was very cost effective; the actual cost document shows INEEL lower cost than any other site or alternatives and even equal to or less than any immobilization-only alternatives. | 13 |
| 11. In consideration of all the factors we have presented, based upon all SPD EIS documents reviewed, it appears to us that DOE should have given INEEL a more favorable consideration for the MOX Fabrication Facility or give the reasons for not doing so.   | 14 |

Respectfully submitted,

  
Lowell A. Jobe  
Coalition 21

MD240

MD240-10

Alternatives

This comment is addressed in response MD240-8.

MD240-11

Alternatives

This comment is addressed in response MD240-6.

MD240-12

Lead Assemblies

DOE acknowledges the commentator's support for lead assembly fabrication and, if required, postirradiation examination at ANL-W. All the lead assembly candidate sites were considered because they have existing facilities that meet the standards for processing special nuclear material, would require only minimal alteration of interior spaces, and are authorized to handle plutonium. ANL-W was also identified as a potential location for postirradiation examination because of its existing hot cell facilities in which tests on fuel rods from irradiated lead assemblies could be conducted.

As discussed in the revised Section 1.6, based on consideration of capabilities of the candidate sites and input from DCS on the MOX approach, DOE prefers LANL for lead assembly fabrication. LANL is preferred because it already has fuel fabrication facilities that would not require major modifications, and takes advantage of existing infrastructure and staff expertise. Additionally, the surplus plutonium dioxide that would be used to fabricate the lead assemblies would already be in inventory at the site. DOE prefers ORNL for postirradiation examination activities. ORNL has the existing facilities and staff expertise needed to perform postirradiation examination as a matter of its routine activities; no major modifications to facilities or processing capabilities would be required. In addition, ORNL is about 500 km (300 mi) from the reactor site that would irradiate the fuel. Decisions on lead assembly fabrication and postirradiation examination will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

**MD240-13**

**Cost Report**

DOE acknowledges the commentor's support for the cost effectiveness of siting the proposed surplus plutonium disposition facilities at INEEL. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

**MD240-14**

**Alternatives**

DOE acknowledges the commentor's support for siting surplus plutonium disposition facilities at INEEL.

The remainder of this comment is addressed in response MD240-6.

2025 Balboa Drive  
Idaho Falls ID 83404

September 15, 1998

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

Comments on Surplus Plutonium Disposition DEIS

- |   |   |
|---|---|
| 1. DOE should clearly state that environmental impacts of the MOX project at INEEL would be minimal and that these impacts were not used to rule out INEEL as the preferred site for the MOX Fuel Fabrication Facility. The failure of INEEL to be the preferred site should not be used to generate opposition to future nuclear technology projects at INEEL.   | 1 |
| 2. To further nuclear technology at INEEL, DOE should select Argonne-West for the fabrication of the MOX lead assemblies and for their post-irradiation examination. ANL-West is the only DOE site deemed capable of doing both tasks. DOE should explain in the DEIS and/or ROD what advantages, if any, accrue from that fact.  | 2 |
| 3. DOE should explain in the DEIS when and why, under the hybrid option, it eliminated any alternative that would involve three separate facilities for the three tasks of (a) pit disassembly and conversion, (b) MOX fabrication and (c) immobilization. I believe an alternative involving Pantex for (a), INEEL for (b), and SRS for (c) would be competitive with other alternatives. It should not be dismissed out-of-hand and should be analyzed more thoroughly. | 3 |

  
George A. Freund

MD239

MD239-1

Alternatives

DOE acknowledges the commentor's support for siting the MOX facility at INEEL. Chapter 4 of Volume I describes environmental impacts of the implementation of alternatives that included the construction and normal operation of MOX facilities at INEEL. DOE prefers that INEEL focus on cleanup and nuclear technology. Environmental impact analyses of the proposed surplus disposition actions discussed in Chapter 4 show that the potential impacts of the proposed actions during routine operations are small for all DOE candidate sites.

SRS is preferred for the MOX facility because this activity complements existing missions and takes advantage of existing infrastructure and staff expertise. Decisions on the surplus plutonium disposition program at INEEL will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

MD239-2

Lead Assemblies

DOE acknowledges the commentor's support for siting lead assembly and postirradiation examination activities in ANL-W at INEEL. As noted in Section 2.17, ANL-W was considered as one of several candidate sites because it would require only minimal alteration of interior spaces, is authorized to handle plutonium, and has existing facilities that meet the standards for processing special nuclear material.

As discussed in the revised Section 1.6, based on consideration of capabilities of the candidate sites and input from DCS on the MOX approach, DOE prefers LANL for lead assembly fabrication. LANL is preferred because it already has fuel fabrication facilities that would not require major modifications, and takes advantage of existing infrastructure and staff expertise. Additionally, the surplus plutonium dioxide that would be used to fabricate the lead assemblies would already be in inventory at the site. DOE prefers ORNL for postirradiation examination activities. ORNL has the existing facilities and staff expertise needed to perform postirradiation examination as a matter of its routine activities; no major modifications to facilities or

processing capabilities would be required. In addition, ORNL is about 500 km (300 mi) from the reactor site that would irradiate the fuel. Decisions on lead assembly fabrication and postirradiation examination will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

**MD239-3 Alternatives**

Section 2.3.1 of the SPD Draft EIS explained that a range of 23 reasonable alternatives remained after evaluating over 64 options against three screening criteria: worker and public exposure to radiation, proliferation concerns due to transportation of materials, and infrastructure cost. Options placing three facilities at three different sites were eliminated from consideration because this arrangement did not meet these screening criteria. Options were not dismissed out of hand, but were eliminated as part of a methodical process to narrow the scope of this SPD EIS to a reasonable range of alternatives. Since publication of the SPD Draft EIS, DOE eliminated another 8 alternatives that would have involved the use of portions of Building 221-F at SRS and a new annex for plutonium conversion and immobilization at that site, thereby reducing the number of reasonable alternatives to 15 that are analyzed in the SPD Final EIS. The environmental impacts of these alternatives are summarized in Section 2.18 and elaborated in Chapter 4 of Volume I.

Mary Jane Fritzen  
390 Lincoln Drive  
Idaho Falls, Idaho 83401-4166

23 August 1998

Subject: Comments for public meeting on Surplus Plutonium Disposition

I have learned a lot about science by reading information about nuclear energy. I am not associated with the field, except to live in Idaho Falls with neighbors who work for nuclear industry. Many good people work for "the site." It has been good for this city. For example, they are peaceful citizens, who contribute to the fine arts, making Idaho Falls a place of peace, beauty and culture.

Points I see in general, which apply to the issue:

1. Need for energy independent of expendable fossil fuel. Otherwise we would depend on Middle East, where peace is insecure.

2. Need for continued good relations with Russia.

Recently (June 1998, Provo, Utah) I listened to a forum of two speakers: the U. S. General in charge of on-site inspections, and the Russian General in charge of on-site inspections. Subject with the nuclear non-proliferation treaty between the two nations. Both generals emphasized the success of such mutual inspections. They said working together makes us friends. We are only afraid of our enemies. For example, the U.S. doesn't fear Canada. The need for disarmament vanishes when we are friendly. Both speakers advocated "open skies," because fear is bred in ignorance or secrecy, while knowledge dispels fear. They said high technology is not needed for open skies. Someone with binoculars in a helicopter could detect a major military build-up. The previous build-up of warheads was caused by each fearing the other was a threat. (I typed detailed notes, which I would be happy to send if requested.)

3. Need to use and value the expertise of nuclear scientists. For example, one speaker at last week's public meeting advocated converting the plutonium to metal for storage.

Because an uninformed public is fearful of nuclear energy, I believe education of students in public schools and of journalists is necessary.

Thank you,  
Mary Jane Fritzen

FD199

FD199-1

Other

DOE acknowledges the commentator's views on the value of nuclear industry workers in Idaho Falls, nuclear power as an alternative energy source, the nonproliferation activities of the United States and Russia, and public information and education programs with regard to nuclear energy.

The United States and Russia recently made progress in the management and disposition of plutonium. In late July 1998, Vice President Gore and Russian Prime Minister Sergei Kiriyenko signed a 5-year agreement to provide the scientific and technical basis for decisions concerning how surplus plutonium will be managed. This agreement enables the two countries to explore mutually acceptable strategies for safeguarding and dispositioning surplus plutonium. During the first week of September 1998, Presidents Clinton and Yelstin held a Moscow summit and signed a statement of principles with the intention of removing approximately 50 t (55 tons) of plutonium from each country's stockpile.

The United States does not currently plan to implement a unilateral program; however, it will retain the option to begin certain surplus plutonium disposition activities in order to encourage the Russians and set an international example.

DOE regards public education as a very high priority. Accordingly, it uses various communications resources to make information on its policies and program publicly available. DOE presents information about the disposition of fissile materials to the public in various forms. These include public hearing presentations, fact sheets, exhibits, technical reports, visual aids, and a video. Information is available from a variety of sources, including DOE reading rooms, the MD Web site (<http://www.doe-md.com>), and attendance at public hearings.



United States  
Department  
of Energy

Comment Form

9/16/98

NAME: (Optional) WALTER L. HAMPSON  
ADDRESS: 8145 RICE LN, BOISE, ID 83703-2566  
TELEPHONE: (208) 853-0814 ; FAX: (208) 853-7528  
E-MAIL: Soon

- SEE MY COMMENT IN 1997 AFTER ATTENDING THE  
SOME FINAL MEETING; THEY ARE ALL STILL VALID  
TODAY (See Copy Attached)
- ALTHOUGH I STILL THINK HANFORD IS THE LOGICAL  
CHOICE FOR MOX FABRICATION, I SEE NO PAR-  
TICULAR OBJECTION TO SAVANNAH RIVER. I AM  
GLAD TO SEE THINGS PROGRESSING TOWARD ESTABLISHING  
U.S. MOX FABRICATION SOON. I THINK WE SHOULD  
DO THE SAME THROUGHOUT THE FUEL CYCLE AND MAIN-  
TAIN "STAND ALONE" CAPABILITY IN CASE OF FUTURE  
NEEDS, BOTH MILITARY AND DOMESTIC.
- THE SUBJECT EIS MATERIAL IS VERY WELL DONE AND  
EASY TO FOLLOW. HOWEVER THE SELECTION OF SITES  
FOR SPECIFIC TASKS SEEMS TO BE BASED ON CONSID-  
ERATION OF OTHER WORKS BEING DONE AT THOSE SITES,  
RATHER THAN THE MOST SUITABLE SITE FOR THE WORK.  
THAT SEEMS TO BE ARBITRARY JUDGMENT AS TO THE  
SITES' CAPABILITY TO ACCOMPLISH A MULTI-PURPOSE  
MISSION AND MAY NOT RESULT IN THE PROPER, LOWEST  
COST, DECISION. TOO MUCH AT ONE SITE MUST BE CONSIDERED  
SINCE IT IS MORE VULNERABLE TO CATASTROPHES??
- THANK YOU FOR THE OPPORTUNITY TO REVIEW & COMMENT. &  
GOOD LUCK! Sincerely, Walter L. Hampson

• Richard's 1997 Comment  
Note: Fixed on 8/16/98;  
will also mail on  
9/16/98 w/ack

FD311

FD311-1

MOX Approach

DOE appreciates the commentor's input on the MOX approach to surplus plutonium disposition. The current plan calls for maintaining the MOX fuel cycle within the United States. The MOX fuel would be fabricated in a Government-owned facility and irradiated in a domestic, commercial reactor in a once-through cycle with no reprocessing.

FD311-2

General SPD EIS and NEPA Process

DOE acknowledges the commentor's views on the selection of sites for MOX fuel fabrication. DOE believes that Hanford's efforts should remain focused on its current high-priority cleanup mission. The importance of cleanup at Hanford was taken into consideration in identifying preferred sites for surplus plutonium disposition activities. However, no decision has been made and DOE will continue to consider Hanford for surplus plutonium disposition programs that are compatible with the Hanford mission.

As indicated in Section 1.6, SRS is preferred for the MOX facility because this activity complements existing missions and takes advantage of existing infrastructure and staff expertise.

Attachment to 1998 Comment, 9/6/98 (1997 COPY)

Surplus Plutonium Disposition  
Environmental Impact Statement  
Comment Form  
United States Department of Energy

NAME: (Optional) WALTER L. HAMPSON  
ADDRESS: 5155 REXLEY, BOULDER, CO 80503-2566  
TELEPHONE: (303) PE3-0614; FAX-0601PE3 7538  
E-MAIL:

• MOX FUEL FABRICATION SHOULD BE DONE! IT CAN BEST BE DONE AT HANFORD WHERE EXTENSIVE R. & D. PLUS COMMERCIAL PLANT RUNS ON MOX FUEL WAS DONE IN THE 1960'S AND EARLY 1970'S. IN ADDITION, A COMMERCIAL MOX PLANT WAS INSTALLED AND OPERATED BY BEXON NUCLEAR (NOW A.G. SAIMENS) ADJACENT TO THE NUCLEAR RESERVATION. A COMMERCIAL RELOAD OF MOX FUEL WAS FABRICATED AND SHIPPED TO THE KATH Test Reactor in GERMANY (BY AIR) IN THE EARLY 1970'S.

• THIS SHOULD BE DONE BY AMERICAN CONTRACTORS ON A SECURE FEDERAL NUCLEAR RESERVATION UNDER MILITARY-TYPE CONTROL.

• ESTIMATES SHOULD BE MADE BY EXPERIENCED ENGINEERS IN THE FABRICATION OF MOX FUEL. IF NOT, ESTIMATES BY PEOPLE WHO HAVE NOT DONE IT SHOULD PROBABLY BE DOUBLED OR TRIPLED. THIS IS A VERY DEMANDING BUSINESS IN EVERY WAY AND THERE IS NO SUBSTITUTE FOR ACTUAL, "HAVE DONE IT" TYPE EXPERIENCE. (DON'T TRY VIRTUAL REALITY ON THIS ONE)

• OTHER COUNTRIES ARE PROCEEDING WITH THE TOTAL FUEL CYCLE, INCLUDING ENRICHMENT (CENTRIFUGE & AVLIS), REPROCESSING, MOX FUEL FABRICATION AND FAST BREEDER REACTORS, REGARDLESS OF WHAT THE UNITED STATES DOES. THEREFORE THE U.S. DECISION SHOULD NOT FACTOR IN "PERCEPTIONS" OF WHAT OTHER COUNTRIES MIGHT THINK OR DO. THEIR ENERGY NEEDS ARE, IN GENERAL, MUCH MORE ACUTE THAN THE U.S., THEREFORE THEY MAY BELIEVE THE ADDED RISKS OF NUCLEAR ARE WORTH IT. PROLIFERATION MUST BE ADDRESSED EVERYWHERE -- IF WE WANT TO BE AN EXAMPLE, WE SHOULD DEMONSTRATE THE PROPER WAY TO DO THINGS, RATHER THAN "BACK AWAY" AND HOPE FOR THE BEST! THE "GENIE" IS OUT OF THE BOTTLE -- WE PUT THE OTHERS IN THIS BUSINESS -- LET'S STAY IN IT AND SHOW THEM! For further information contact: How to do it right! U.S. Department of Energy, Office of Plutonium Disposition, MD-4 Forrestal Building, 1000 Independence Ave., SW, Washington, D.C. 20585 1-800-820-5158

FD311

FD311-3

MOX Approach

DOE has identified as its preferred alternative a hybrid approach of using both immobilization and MOX fuel fabrication to disposition up to 50 t (55 tons) of surplus plutonium. Under this alternative, approximately 33 t (36 tons) of clean plutonium metal and oxides would be used to fabricate MOX fuel, which would be irradiated in domestic, commercial reactors. The remaining 17 t (19 tons) of surplus, low-purity, nonpit plutonium is not suitable for fabrication into MOX fuel because of the complexity, timing, and cost that would be involved in purifying those plutonium materials.

The remainder of this comment is addressed in response FD311-2.

FD311-4

MOX Approach

DOE conducted a procurement process to acquire MOX fuel fabrication and irradiation services. The selected team, DCS, would design, request a license, construct, operate, and deactivate the MOX facility as well as irradiate the MOX fuel in domestic, commercial reactors. However, these activities are subject to the completion of the NEPA process. Although COGEMA is international, it is one of only a few companies with recent commercial MOX fuel fabrication experience, and this experience would contribute to the success of DOE's MOX fuel fabrication effort.

The MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program.

FD311-5

Nonproliferation

The Joint Statement of Principles signed by Presidents Clinton and Yeltsin in September 1998 provide general guidance for achieving the objectives of a future bilateral agreement to disposition surplus plutonium in the United States and Russia. Sensitive negotiations between the two countries have indicated that the Russian government accepts the technology of immobilization for low-concentration, plutonium-bearing materials, but that

Comment Documents and Responses—Idaho



the MOX approach would be considered for higher-purity feed materials. DOE will continue to discourage Russia from reprocessing its spent nuclear fuel and starting a plutonium cycle but this issue is beyond the scope of this SPD EIS. As stated in response FD311-1, the use of U.S. surplus plutonium in existing domestic, commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). The proposed use of MOX fuel is consistent with the U.S. nonproliferation policy and would ensure that plutonium which was produced for nuclear weapons and subsequently declared excess to national security needs is never again used for nuclear weapons. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input, not “perceptions” of what other countries may think or do.

NEWS RELEASE

RE: The MOX plutonium fuel refinery(or how to accidentally become the supersite)

Rumors of the death of MOX have been greatly exaggerated. How long will it take for Kempthorne or Huntley to organize a rally for the nuclear project after they are elected? I'd give them 30 minutes to call their supporters on the Idaho Falls Chamber of Commerce. These people have never met a nuclear project that they didn't like. We should be prepared. We should reinstate accident analysis into our state Air Quality Permits but our politicians refuse. Please let me explain...

The first tier EIS for plutonium disposition talked about the "triple play".(1/97) For the first time the DOE stated that an accident at the nuclear reactors that will use the plutonium fuel(plus make tritium for nuclear weapons and electric power to be sold) could cause up to 7,000 cancer deaths. In the final analysis INEEL has less people living in the 50 mile area that is used to compare project sitings. The DOE admits that the choice of where to build this nuclear supersite may change in the final document.

In 1991, the DOE was passing out pink slips at the ICPP, saying fuel reprocessing was over. At the same time, the DOE was applying for 17 Air Quality Permits to prepare to reprocess 17 types of fuel rods. Thanks to the nuclear "deal" we are now receiving many types of fuel rods from around the world. The nuclear businesses that pay Kempthorne and Huntley view spent fuel rods and weapons grade plutonium as a fuel source, not a waste.

During the documented transcript of my appeal of that Air Quality Permit I caught the DOE lying about the accident analysis that was required for the permit. The wrong computer program, that wasn't supposed to be used for accidents, eliminated most of the radionuclides released, falsifying the results. The state response was to look the other way and then they removed the requirement for accident analysis for permits!

So I ask you, were they protecting your children, or protecting Lockheed? Even if the MOX plutonium project goes to South Carolina, why won't Kempthorne and Huntley join me in my effort to reinstate accident analysis to the permits to protect state's rights?

My sympathy is with the family of the INEEL worker who died in their most recent accident. Doctors make mistakes, too, and fortunately this was not a big nuclear accident. Doctors can only kill one person at a time, when we make a mistake during a necessary operation. The nuclear businesses can devastate a whole area and that's why we must question if the nuclear future is on a dead end road. The people of Idaho have a right to know the truth about our nuclear future. We have a right and obligation to our children to not remain at the mercy of political salesmen like Kempthorne and Huntley. Is states right's just a cute phrase politicians use to get elected? Should we remain at the mercy of Bill Clinton's DOE ? Do Bill, Dirk, and Bob know what's best or should we put accident analysis back in our state permits ?

Dr. Peter Rickards DPM  
Box 911,TF,83303  
734-7941(H), 734-3338(W)

IDD02

IDD02-1

Human Health Risk

DOE acknowledges the commentor's concern about the MOX approach. This SPD EIS does not address the siting or operation of a "triple play" reactor. Section 4.28 was revised to provide reactor-specific analyses and discuss the potential environmental impacts of using a partial MOX core during routine operations and reactor accidents. Reactors that use MOX fuel have small accident risks similar to those associated with reactors that use only LEU fuel. Were a major accident to occur at a reactor using either fuel type, there would be fatalities in the public. However, the probability of a major accident actually occurring is about 1 in 100,000 over the lifetime of the reactor; thus, the risk (consequence times probability of occurrence) of an LCF in the public is much less than 1.

Changes to Idaho air quality permit requirements are beyond the scope of this EIS; they are a State rather than a DOE issue. However, contacts have been made with the Idaho Division of Environmental Quality and with the contractor responsible for air quality permits for INEEL. There have been no State requirements to perform an accident analysis as part of the air-permitting process regardless of the type of pollutant that could be emitted (criteria pollutants, toxic pollutants, or radionuclides). Only routine operations are considered in the air-permitting process.

Yes. This is Thomas J. Sutter. 1414 South 35 West, Idaho Falls, ID 83402-5538. Telephone number is 529-0624. What I'd really like to know is where the workshops are at today on the Surplus Plutonium Disposition Draft Environmental Impact Statement Public Meeting. I see there is an afternoon and evening workshop, but it doesn't give where they're going to be at.

Second thing is, I just want to let it be known that I'm in favor of the MOX program and I would think that disposing of plutonium which is no longer needed for nuclear weapon should be in the best interests of our country. Also I would think that if we had the opportunity to receive any of that material from any other nation in the globe, it would be best if we did the reprocessing and particularly if we could do it here in Idaho it would make a lot of sense to me. But if we can't then I would encourage reprocessing it wherever its going to be done. And I would like to also note that this plutonium is very valuable material and it should not be placed in a depository where it could not be put to better use at some time in the future and the, only the most impure plutonium that can not have any further use should be put in the glass and buried directly. So I'd just like to talk in support of the MOX program as proposed by the Department of Energy. Thank you very much and if you would let me know where the meeting is going to be I would appreciate it. Tom Sutter 529-0624. Thank you.

PD033


PD033-1

MOX Approach

DOE acknowledges the commentor's support for the MOX approach.

It should be noted, however, that DOE is not considering reprocessing any of the surplus plutonium that is the subject of this SPD EIS. The proposed action is intended to permanently remove 50 t (55 tons) of plutonium from the U.S. weapons stockpile by converting that plutonium into proliferation-resistant forms. Reprocessing plutonium would not be consistent with that goal.

DOE has identified as its preferred alternative the hybrid approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.



United States  
Department  
of Energy

Comment Form

NAME (Optional)  
ADDRESS:  
TELEPHONE:  
E-MAIL:

Theodore Watanabe  
P O Box 24411  
Boise Falls ID 83401  
(208) 323 5712  
Presently weapons material of all type  
are stored in secure locations.  
The best option is maintain status  
quo. 100 year REEXAMINE the problem

1

IDD06

IDD06-1

Alternatives

DOE acknowledges the commentor's support of the No Action Alternative to surplus plutonium disposition, the details and environmental impacts of which are described in Section 4.2. DOE has determined, however, that no action (i.e., continued storage) would not satisfy the surplus plutonium disposition program goal: to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

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

Dear Department of Energy, Office of Fissile Materials Disposition:

I do not support plutonium processing at the Pantex Plant. In the *Surplus Plutonium Disposition Draft Environmental Impact Statement*, the Department of Energy prudently decided against locating one plutonium processing facility (MOX fuel fabrication) at the Pantex Plant. For the following additional reasons, a Plutonium Pit Disassembly and Conversion facility also should not be located at Pantex:

**Pantex Should Not Become the Next Rocky Flats**

Pantex has never processed plutonium. The Pantex Superfund site has so far apparently escaped the type of radioactive contamination found at plutonium processing sites like Rocky Flats in Colorado and Hanford in Washington.

**Risks That Are Unknown Are Too High**

The Pantex Plant occupies an area that is a fraction of the size of other plutonium sites.

SIZE MATTERS: A Comparison of the Area of the Four Candidate Sites (Square Miles)			
Pantex	Savannah River Site	Idaho National Engineering Lab.	Hanford
23	309	890	560

The technologies proposed in the Plutonium Pit Disassembly and Conversion Facility are undemonstrated and unproven. It is unacceptable to have plutonium operations above the Ogallala Aquifer and only one mile from where people live and work in a vibrant agricultural producing area. The Pantex legacy already includes heavy contamination in a perched layer of groundwater less than one hundred feet above the Ogallala Aquifer. This pollution extends from under the Pantex Plant to adjacent private property and the real impacts remain unknown. The risk of any additional groundwater pollution is unacceptable in an agricultural region.

Common sense dictates that negative consequences to people and farmland from nuclear accidents are far more likely in a small, open, windy location like Pantex. The Department of Energy has acknowledged that the most visually unappealing feature of the plutonium facilities will be their smokestacks. Visual blight will be a minor inconvenience compared to the air pollutants--many of them radioactive--expected to escape into the atmosphere daily through smokestack filters. Routine air emissions of tritium, plutonium, americium, and beryllium constitute unacceptable new hazards to the Texas Panhandle.

MD045

**MD045-1**

**Alternatives**

DOE acknowledges the commentor's opposition to siting the proposed surplus plutonium disposition facilities at Pantex. As described in Chapter 4 of Volume I and summarized in Section 2.18, potential impacts of any of the proposed activities during routine operations at any of the candidate sites would likely be minor. To avoid contamination that has occurred in the past at some DOE sites, DOE would design, build, and operate the proposed surplus plutonium disposition facilities in compliance with today's environmental, safety, and health requirements. Decisions on the surplus plutonium disposition program at Pantex will be based upon environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

**MD045-2**

**Human Health Risk**

Although Pantex is smaller in overall size in comparison with the other candidate sites, analyses in Chapter 4 of Volume I indicate that impacts of operating the pit conversion facility on health, safety, and the environment at Pantex would likely be minor (e.g., see Section 4.6).

While it is true that the pit conversion facility is the first consolidated facility for accomplishing this mission on a large scale, the processes that would be used in this facility are not entirely new. Many of these processes are in use at LANL and LLNL. In addition, DOE has recently started a pit disassembly and conversion demonstration project at LANL, where processes will be further developed and tested.

Section 4.26.3.2 analyzes impacts to the environment (including contamination to the Ogallala aquifer) due to construction and normal operation of a pit conversion facility at Pantex. There would be no discernible contamination of aquatic biota (fish) or drinking water, either from the deposition of minute quantities of airborne contaminants into small water bodies or from potential wastewater releases. Therefore, it is estimated that no measurable component of the public dose would be attributable to liquid pathways. Appendix J.3 includes an analysis of

potential contamination of agricultural products and livestock and consumption of these products by persons living within an 80-km (50-mi) radius of Pantex. If the proposed surplus plutonium disposition facilities were located at Pantex, a very small incremental annual dose to the surrounding public from normal operations would result via radiological emission deposition on agricultural products (i.e., food ingestion pathway). This dose (about 0.56 person-rem/yr) would be 0.0006 percent of the dose that would be incurred annually from natural background radiation. This analysis indicates that impacts of operating the pit conversion facility on agricultural products, livestock, and human health at Pantex would likely be minor.

#### MD045-3

#### Human Health Risk

It is DOE policy to operate in compliance with all applicable air quality requirements and to protect human health and the environment. DOE takes into consideration pollution reduction techniques to minimize air releases when designing, constructing, and operating its facilities. It also considers aesthetic and scenic resources in the design, location, construction, and operation of facilities. Potential concentrations of air pollutants at Pantex for the various alternatives have been estimated, considering appropriate local meteorology and other data associated with the area. Because the releases from the pit conversion and MOX facilities would be very small (see Appendix J.3.1.4), estimates of resultant radiological health risks are small. As indicated in Section 4.17.2.4, the maximum possible dose delivered to a member of the public during operations of the MOX and pit conversion facilities at Pantex would be 0.068 mrem/yr, 0.02 percent of the dose that individual would receive annually from natural background radiation. The estimated dose to the public from radiological emissions (e.g., americium, tritium, and plutonium) would be 0.077 person-rem/yr which would result in an increase of  $2.9 \times 10^{-3}$  LCFs over the 10-year operating life of the pit conversion facility. Any new facilities that might be built would be within existing site boundaries, and would be matched aesthetically with the current plant to limit potential visual impacts.

There is Valid, Strong Criticism of Safety  
in the Storage of Plutonium at Pantex

Since Pantex became the nation's long-term storage location for up to 20,000 plutonium pits, promises to improve safety conditions have not happened. The U.S. Government Accounting Office and the Defense Nuclear Facilities Safety Board have issued reports critical of plutonium storage safety at Pantex. Fifty million taxpayer dollars were spent on a failed plutonium pit container program (the AT-400A) and the plan to move over 10,000 pits into a safer remodeled building (Building 12-66) has also failed.

When it comes to plutonium pit storage problems, Panhandle residents are back to square one. The plutonium remains in old, unsuitable, corroding storage containers and in 35-55 year old "bunkers" that the Department of Energy promised were for "temporary" use. Plutonium that is supposed to be stored in a stable environment now sits in the bunkers—all but three without air conditioning—even as the Texas Panhandle experiences a spell of more than 40 consecutive days of 90+ degree temperatures, and more than 20 days this summer with thermometers registering 100+ degrees. If the Department of Energy cannot accomplish the job of safely storing Pantex plutonium in the most stable environment, there is no reason to accept its unsubstantiated assurances to safely process deadly plutonium powders at Pantex.

Thank you for this opportunity to comment.

Sincerely,

as concerns must, I appeal to the disposition  
process to remove all endogenous storage as well  
as processing further unsafe nuclear components  
in Pantex site and safekeeping be initiated for the  
world's peoples.

Mary J. Nicholson  
Richard F. Nicholson

720 Westmoreland Dr.  
Bismarck, ND 58105

membership at the PEACE FARM

MD045

MD045-4

DOE Policy

DOE acknowledges the commentor's concern regarding the safe storage of plutonium pits at Pantex. DOE is committed to the safe, secure storage of pits and is evaluating options for upgrades to Pantex Zone 4 facilities to address plutonium storage requirements. DOE has addressed some of the commentor's concerns in an environmental review concerning the repackaging of Pantex pits into a more robust container. This evaluation is documented in the *Supplement Analysis for: Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components—AL-R8 Sealed Insert Container* (August 1998). This document is on the MD Web site at <http://www.doe-md.com>. Based on this supplement analysis, the decision was made to repack pits at Pantex into the AL-R8 sealed insert container and to discontinue plans to repack pits into the AT-400A container.

Worker exposures estimates attributable to the decision to repack pits in AL-R8 sealed insert containers were incorporated in the revised Section 2.18 and Appendix L.5.1.

The issues raised in this comment relate to pit storage decisions made in the *Storage and Disposition PEIS* and the *Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components* (DOE/EIS-0225, November 1996). DOE is considering leaving the repackaged surplus pits in Zone 4 at Pantex for long-term storage. An appropriate environmental review will be conducted when the specific proposal for this change has been developed, addressing, for example, whether additional magazines need to be air-conditioned. The analysis in this SPD EIS assumes that the surplus pits are stored in Zone 12 in accordance with the ROD for the *Storage and Disposition PEIS*.

MD045-5

Nonproliferation

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an

environmentally safe and timely manner. In late July 1998, Vice President Gore and Russian Prime Minister Sergei Kiriyeiko signed a 5-year agreement to provide the scientific and technical basis for decisions concerning how surplus plutonium will be managed. This agreement enables the two countries to explore mutually acceptable strategies for safeguarding and dispositioning surplus plutonium. During the first week of September 1998, Presidents Clinton and Yeltsin held a Moscow summit and signed a statement of principles with the intention of removing approximately 50 t (55 tons) of plutonium from each country's stockpile.

The remainder of this comment is addressed in response MD045-4.



**O'NEILL, JOHN**  
**PAGE 1 OF 1**

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

RE: Fissile Materials Disposition, SPD\*EIS COMMENT

The fact that we have a surplus of fissile material to dispose of would indicate that we over produced and should be cutting back on up-grading U233, Pu239 and U235.

If we have a surplus of fissile material as you maintain, the up-grading plants at Oak Ridge, Paducah KY and Portsmouth OH should shut down; thereby lessening the requirement for electric power plants (the Indiana Kentucky Electric (IKE) government contract plant at Madison, IN). The IKE plant that furnishes power for the diffusion plant at Portsmouth OH has been burning around 4 million ton of high sulfur coal per year for 50 years (recently switched to Wyoming coal) with environmental complaints all the way to Canada. CCHW rates the plant EPA Superfund. The Ohio river is so contaminated with PCBs the fish can't be eaten, but millions of people have to drink from it.

'Thanks for your consideration.

John O'Neill  
1713 Oak Hill Dr.  
Madison, IN 47250-1750

PH: 812-273-1600

Sincerely,

John O'Neill

MD003

MD003-1

## General SPD EIS and NEPA Process

The Portsmouth and Paducah plants have not produced fissile materials since 1992; the Oak Ridge plant is shut down. These plants produced enriched uranium for commercial nuclear reactors.

The fate of the gaseous diffusion plants at Portsmouth and Paducah would not be affected by the surplus plutonium disposition program. Section 4.30.3 analyzes the conversion of depleted uranium hexafluoride, from a representative site (Portsmouth), to uranium dioxide, which would be used as feedstock for immobilization and MOX fuel fabrication. DOE currently has a large excess inventory of depleted uranium hexafluoride, therefore the gaseous diffusion plants do not need to operate to support this program. Further, DCS has the option of acquiring uranium dioxide from another source.

*Comment Documents and Responses—Indiana*

3-253

<input checked="" type="checkbox"/> <b>YES!</b>	Keep Texas Panhandle water, air, and soil safe from radioactive pollutants	1
What does Rocky Flats have to do with		
<input checked="" type="checkbox"/> <b>NO!</b>	To any plutonium processing in the Texas Panhandle	2
a workable energy policy for the USA?		
<input checked="" type="checkbox"/> <b>YES!</b>	To minimal handling and processing of plutonium and other nuclear materials	3
<input checked="" type="checkbox"/> <b>NO!</b>	To converting military plutonium for use in mixed oxide (MOX) fuel	4

Signed: *Vic Hummert*

CD0059

CD0059-1

Alternatives

Sections 4.17 and 4.26.3 describe the potential effects of the maximum impact alternative on air quality, water resources, and soil. These analyses indicate that the impacts of construction and normal operation of the pit conversion and MOX facilities on air, water, and soil at Pantex would likely be minor. To avoid future contamination, DOE would design, construct and operate the proposed surplus plutonium facilities in compliance with today's more stringent environmental, safety and health requirements.

CD0059-2

Alternatives

DOE acknowledges the commentor's opposition to the surplus plutonium disposition program at Pantex. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

CD0059-3

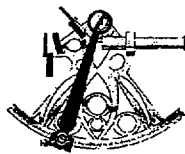
DOE Policy

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. DOE is committed to public and worker safety during the construction, operation, and deactivation of the proposed surplus plutonium disposition facilities, and would implement appropriate controls and procedures to ensure compliance with all applicable Federal, State, and local laws, rules, regulations, and requirements.

CD0059-4

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.



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Howard Canter  
(Attn: Mr. Dave Knowlton)  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
Washington, DC 20585

July 21, 1998

Dear Messrs Canter and Knowlton,

First I would like to thank Mr. Dave Knowlton for taking the time to speak with me today by phone. I really did believe in 1997 when my book, *The Case Against MOX*, was presented that this ill-conceived program had been put to bed, but I was wrong. I now find that DOE is going through a whole new round of environmental impact statements to foster the program of Ex-Secretary Hazel O'Leary.

So I now have to petition DOE for redress of grievances with regard to the areas in which they were unfair to me in answering my prior questions, and in regard to systematic objections I have to their entire EIS process. I will have answers to the questions in this letter if it's the last thing I ever do in this world. It might save us all a lot of time if you just sent me a letter back with the answers.

(1) First of all I want to ask about the deal with Yeltsin government in the Russia. Now, if I understand that right we have to destroy our weapons grade plutonium because Mr. Yeltsin insisted on it and he wouldn't make the deal unless we agreed to do it just that way. Is this true? Isn't it in fact true that it was Mr. Clinton and the American delegation that initially proposed the MOX plan, not Mr. Yeltsin, and it was us that insisted in working this into the agreement not the Russians, and it was because of internal politics and priorities within the White House and within the newly constituted DOE with all the new appointees formerly with the Natural Resources Defense Council and other environmental groups in Washington DC? If I ask Mr. Yeltsin about this is he going to say that it was him that insisted on the MOX program as a condition of any deal, or is he going to deny that, and say it was an American proposal, and an American idea?

MD007

MD007-1

General SPD EIS and NEPA Process

DOE makes every effort to respond to each comment in a fair and appropriate manner and regrets if previous responses were not satisfactory. DOE acknowledges the commentor's opposition to the MOX approach. The *Storage and Disposition PEIS* ROD outlines DOE's decision to pursue a hybrid approach to surplus plutonium disposition that would make the plutonium inaccessible and unattractive for weapons use. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.

MD007-2

Nonproliferation

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. We must ensure that nuclear arms reductions cannot be easily reversed, politically or legally, by making such reuse technically difficult, time consuming, and very costly. Sensitive negotiations between the two countries have indicated that although the Russian government accepts the technology of immobilization for low-concentration, plutonium-bearing materials, but that the MOX approach would be considered for higher-purity feed materials. Close cooperation between the two countries is essential to achieve the objectives of nonproliferation and arms reduction and to ensure secure management of nuclear weapons materials.

(2) From my conversation with Mr. Dave Knowlton this day, I understand that only the newer of the American reactors will be used to burn MOX fuel. This seems to be a concession to the fact that embrittlement is a genuine concern in using MOX pellets in a reactor core. Is that correct. If embrittlement is not a concern of any kind, then why not use old, middle aged, and new reactors? Why limit the MOX program to the newer reactors. If embrittlement is a concern and MOX pellets are placed in new reactors won't this fuel age them prematurely. Won't it cost the utilities money to replace parts and to take extra safeguards against embrittlement? Won't the utilities pass these costs on to somebody? Would that be the ratepayers or the shareholders? Americans either way right?

3

(3) I understand that there are estimates on the total volume of low level waste that the MOX program will entail. What are they? What is the scenario for dealing with these low level wastes. Are the Governors in the states where they are generated going to be stuck with them? Is the Federal government going to take responsibility for them? Where will they be placed, Yucca Mountain not being open, and Barnwell be available only to a small select group of utilities. Will the governors have to fend for themselves somehow?

4

(4) NASA and DOE were very unfair to me in answering my issue about the potential value of Plutonium-239 as a propulsion source for interplanetary travel in the next century. Every effort was made to create confusions between Pu-238 and Pu-239. Additional efforts were then made to create confusions between propulsion systems and onboard electrical power systems. Finally my ideas were compared to matter and anti-matter systems which is to say they were written off utterly and placed in the file of ideas that had previously been written off. Then DOE turned around and told me that they were in regular consultation with NASA about any possible uses NASA might have for nuclear materials. Well, listen I can sympathize if you don't understand my ideas. There is the Library of Congress, there are many sources of information, go get information, learn the difference between a propulsion system and an RTG and a thermionic battery. But telling me you are in regular consultation with NASA over the issues I raise is plainly untrue and unfair. It's like saying, "Your consent is not required, we know what we are doing, we are having meetings with the right people, so but out". As you well know from our Declaration of Independence governments derive their just powers from the consent of the governed. When you treat me unfairly you take the government of the United States off the path of just powers and you divert it onto the path of violent usurpations. That is not your intent, I know. So pay attention to my points and answer them as if there was a possibility that they might contain some element of intelligence outside of your previous considerations. If in the 21st century this country has to go back and refine the Plutonium-239 that you are about to destroy so that interplanetary craft can be propelled around the solar system, your efforts in the MOX

5

MD007

MD007-3

NRC Licensing

Section 4.28 was revised to discuss the potential environmental impacts of operating Catawba, McGuire, and North Anna, the reactors that would use the MOX fuel. Commercial reactors in the United States are capable of safely using MOX fuel. In fact, several reactors in Western Europe have been operating successfully with MOX fuel for over 10 years. Although MOX fuel results in a harder neutron spectrum than LEU fuel, and thus a greater fluence of high-energy neutrons on the pressure vessel, this effect is well understood and has been shown to be within the capability of pressure vessels to withstand. It is the remaining operational life of reactors which formed the basis for DOE's selection process. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

Reactor vessel embrittlement is a condition in which the fast neutron fluence from the reactor core reduces the toughness (fracture resistance) of the reactor vessel metal. Analyses performed for DOE indicated that the core average fast flux in a partial MOX fuel core is comparable to (within 3 percent of) the core average fast flux for a uranium fuel core. All of the mission reactors have a comprehensive program of reactor vessel analysis and surveillance in place to ensure that NRC reactor vessel safety limits are not exceeded.

MD007-4

Waste Management

Appendixes H.1.2.3, H.2.2.2, H.3.2.2, and H.4.2.3 provide estimates of the amounts of LLW that would be generated by operation of the MOX facility and describe the LLWs that would be at Hanford, INEEL, Pantex, and SRS, respectively. These sections also describe facilities that may be used to treat, store, and dispose of LLW. DOE would be responsible for disposition of waste generated by the surplus plutonium disposition program. As described in Sections 2.18.3 and 4.28.2.8, additional spent fuel would be produced by using MOX fuel instead of LEU fuel in domestic, commercial reactors. Spent fuel management at the proposed reactor sites is not expected to change dramatically due to the substitution of MOX assemblies for some of the LEU assemblies. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic

repository. Yucca Mountain, Nevada, is being studied as a location for a potential geologic repository for HLW and spent fuel. There are no plans to place LLW in Yucca Mountain.

**MD007-5** **Other**

As discussed in response MD007-1, DOE makes every effort to respond to each comment in a fair and appropriate manner and regrets if previous responses were not satisfactory. DOE acknowledges that there may be future uses of plutonium 239 as the commentor suggests, but the growing threat of nuclear proliferation is of immediate concern, requiring that attention be focused on ensuring the safe, secure, long-term storage and disposition of surplus weapons-usable fissile plutonium. The activities proposed in this SPD EIS would implement U.S. policy on disposition and nonproliferation of surplus plutonium.

program will be regarded as a gargantuan piece of technology mismanagement. No one is going to want to hear about how Yeltsin made you do it -- which I expect he will deny. Ms. O'Leary will not be there to take responsibility as she is not there even now.

(5) The Pollyanna vision is that the MOX Program will somehow take weapons grade Plutonium out of this universe so that no bad people can make any bad bombs with it anymore. That myth may wash at the Unitarian Church but it is much too dumb for a serious government to believe or make into a basis for policy. The MOX process only destroys 40% of the Plutonium by fissioning it. The rest is still in the spent fuel. The French who are experts in reprocessing hot spent fuel just like that could and would in ten days make a contract with the U.S. to trade us weapons grade plutonium for spent fuel bundles. The Russians know this, everyone does. So the whole Pollyanna vision premise for the MOX program is a hoax.

(6) Another hoax is the environmental impact statement process. Here's why. When they want to know if anyone thinks the MOX program is a good idea they go to the five towns in this nation where hundreds and thousands of people will be employed, and paid, and be able to send their kids to college based on their work making MOX pellets. Of course anyone is free to come to these meetings and speak at Hanford, or at Pantex, etc, but it is a very biased crowd that DOE knows is going to be there. They couldn't sell their case to a crowd that was on the level. They can only sell their case to the direct beneficiaries of the program. It would be like holding hearings on whether tobacco smoking is a good idea in Virginia. Now at the same time DOE makes sure that no information is released about which commercial nuclear power reactors are likely to get the MOX pellets. Why? Because that would tend to create a local constituency against the MOX program. People might say, "Well gee we have got enough to worry about with a nuclear reactor here we don't want to worry about taking plutonium out of nuclear bombs and putting it in the reactor." DOE says "We can't talk about what consortiums are interested in the request for proposals because that's in the RFP process". Usually the whole RFP process is public information as well it should be. But in this case it is secret information, and why? Could it be that DOE wants to have the fullest imaginable public input as long as they are singing to the choir at Hanford where people are going to make money out of MOX but DOE plans to keep the whole RFP thing secret and just slip a few MOX pellets into people's local nuclear reactors with no public input from anybody who might be harmed by a danger or an injury or a cost from the MOX Program. If that selective process of revealing and collecting information doesn't make the EIS process a hoax, what would? It does. DOE is spending millions of dollars publishing millions of pages of EIS documents when in fact it is avoiding all genuine public comment from anybody that might have a reason to oppose this ill-starred scheme.

MD007

MD007-6

Nonproliferation

It is true that in the MOX approach only a fraction of the plutonium would actually be consumed in the reactor; but the remainder would be an integral part of massive spent fuel assemblies that would meet the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. The spent fuel assemblies would be so large and radioactive that any attempted theft of the material would require a dedicated team willing to suffer large doses of radiation, and substantial equipment for accessing and removing the spent fuel from the storage facility and carrying it away. Recovering the weapons-usable plutonium from spent fuel could be done in a reprocessing facility, as suggested; but it should be kept in mind, however, that approximately 726 t (800 tons) of plutonium exists in spent fuel in the world today. If weapons-usable plutonium were transformed to plutonium in spent fuel, it would become only one part of a much larger inventory and would not present a significantly more attractive target for diversion than the existing plutonium in spent fuel.

MD007-7

General SPD EIS and NEPA Process

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected sites and thus with the populations most directly concerned. Because it was known that not everyone wishing to comment on the proposed action could attend the hearings, DOE provided several other means for providing comments: mail, a toll-free telephone and fax line, and the MD Web site. All comments, regardless of how they were submitted, were given equal consideration.

The SPD Final EIS was not issued until the proposed reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and

It appears that the MOX program is very much alive and well at DOE, more's the pity. I want these questions answered, and I'll do what it takes to get them answered. Intellectual engagement is my only strategy for derailing this program. I don't plan to sue, to bring administrative proceedings, to call for Congressional hearings, to go to the papers, or to write a book. I only plan to talk to you, to petition you for the grievances arising from my past questions that have not been treated with respect, and to request firmly but fairly that you answer my present inquiries fully and candidly. You could not go wrong by assisting the informed consent process and supporting the idea that the powers you exercise are just powers. Snubbing me is not going to work. If it were going to work, it would have done so in the first five or ten or fifteen years of my career as an anti-nuclear lawyer. On the other hand, if you can satisfy my objections with reasonable answers, as you have sometimes done in the past, I will cease from them. If I cease, there will be very few other objectors that could or would plausibly stand in your way.

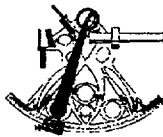
Sincerely,



Robert Gary  
Attorney at Law

MD007

irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999. This *Supplement* included a description of the affected environment around the three proposed reactor sites, and analyses of the potential environmental impacts of operating these reactors using MOX fuel (Sections 3.7 and 4.28 of this SPD EIS, respectively). During the 45-day period for public comment on the *Supplement*, DOE held a public hearing in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.



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Mr. Dave Knowlton  
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U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

July 23, 1998

Dear Dave Knowlton,

You know I object to the MOX program and that I want DOE to be responsive to my questions, and that I am ready to make that happen. It seems fair to me that you should have a better understanding of my premises than you might have based on the very short record of correspondence between us. So in fairness I should be more complete in stating my objections and their foundations.

You have my letter of two days ago (additional copy enclosed) so you know that some of my issues pertain to the matters of embrittlement and low level waste. You also know that I am very concerned about possible misrepresentations by DOE concerning the source of the whole MOX idea which was integrated into the deal we made with Veltain. If there's a valid treaty I as an American am bound to respect it, but if Veltain is just a cover for a hairbrained scheme that needs to be questioned, I am bound to question it. As the appointees from the Natural Resources Defense Council well know and would all affirm, it is natural for the outsiders to become the insiders and one must always be cautious in the treatment of this day's outsiders lest they become tomorrow's insiders.

Prior to yesterday's letter, I have also raised an objection based on setting a precedent for international conduct. According to the U.S. Navy I am a fully certified and qualified international lawyer and here's what I want you to know. If we play about with plutonium in power reactors then Libya and Pakistan and Syria and Sudan and Patagonia will come around tomorrow and tell us about their sovereignty and how they have a right to do the exact same thing, and the next day it will be North Korea and Cuba. Think about the situation then. You say it's not your job. But you are the man who is going to do this deed. If you have no connection with it and no responsibility for it who does? Nobody? So we catch these guys red handed with plutonium and they say it's part of their MOX program and then what? The world, you think, will be far more secure with 15 bad

MD149

MD149-1

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.

Specific domestic and international safeguards would be developed for the proposed surplus plutonium disposition facilities; these are the subject of ongoing sensitive negotiations between the United States and Russia. Because the surplus plutonium is weapons usable, the safeguards would include physical inventories as well as several active and passive measures to guard against theft and diversion.

DOE makes every effort to respond to each comment in a fair and appropriate manner. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.



actor nations having the perfect cover story for their possession, transport, processing, and fabrication of plutonium in and around their nuclear reactors. You say IAEA has billions and trillions of inspectors that will straighten all of this out, separate the truth from the falsehood and undo the effects of our setting this stupid precedent. I say not. So we disagree. But you should know that the international law precedent is an issue with us even if the State Department has never thought about that, because there are more things in heaven and earth than the State Department has thought about or knows in its philosophy.

My ideas about space travel are truly far out. What I say is this. It is inconceivable that we could lift through the earth's atmosphere all the reaction mass needed for solar system development. If there is some valuable thing somewhere in the solar system we are going to need reaction mass from moon water and Europa water to get there, acquire it, and bring it back. But beyond that we are going to need the best energy source we know which is the hydrogen bomb. What's required is bombs the size of sandgrains made of plutonium-239, polonium, beryllium, and tritium, detonated by phased lasers at the gigawatt picosecond level. This is the heat source. The moon ice provides the reaction mass. Newton says you need both, and I'm telling you it is not possible to lift both through the atmosphere you can only lift the energy source and that has to be at least 50% plutonium 239 in sandgrain sized particles at the ends on fiberoptic laser conductors (like a hair with a grain of sand at the end). This goes into a block of ice and the whole assembly is detonated in a gatling gun arrangement at the rate of about 10 per minute to produce thrust.

Take away the plutonium and it doesn't work. You see plutonium is important for setting off tritium. This is the highest and best use of the stuff, not power reactors. The MOX program deprives the citizens of this country of a precious strategic mineral that they have paid for and taken risks to acquire. It takes away one of our opportunities in the 21st century.

Now, I recognize, and I did recognize when we spoke, that without plutonium you need uranium-235 to make a power reactor work, and that has to be refined at great cost and risk at the Y-12 plant at Oak Ridge, and that's not a minor consideration. So let's be candid on this one point. I know that the MOX program lends a whole new lease on life to the power reactor program in the U.S. I want the power reactors closed down based on their original lease on life and not the extended lease that the MOX program would give them. They are dangerous. They are dumb. They were an example of the same kind of "turning the bad into the good" technology mismanagement which is present in the MOX plan. What we have in the MOX plan is just a new Atomic Energy Act of 1957, and surprisingly enough the people pushing for it are not Yeltsin at all but the actual children of the scientists who pushed for the Atomic Energy Act of 1957. There are the real facts you see?

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MD149

MD149-2

MOX Approach

DOE acknowledges that there may be future uses of plutonium 239 as the commentor suggests, but the growing threat of nuclear proliferation is of immediate concern, requiring that attention be focused on ensuring the safe, secure, long-term storage and disposition of surplus weapons-usable fissile plutonium. The activities proposed in this SPD EIS would implement U.S. policy on disposition and nonproliferation of surplus plutonium.

MD149-3

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach. Uranium is mined, milled, and converted to uranium hexafluoride before it is enriched in the 235 isotope at either the Portsmouth or Paducah gaseous diffusion plants operated by the United States Enrichment Corporation. Uranium is no longer enriched at Oak Ridge. The MOX approach is not intended to affect the viability of nuclear power. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

Comment Documents and Responses—Maryland

GARY RESEARCH OPERATIONS RESEARCH  
ROBERT GARY  
PAGE 3 OF 3

I want my questions answered not because I need information but because I want you to have the information, you and Ambassador Richardson, an intelligent man, a man with no record of managerial incompetence, quite the contrary, a man of proven good judgement. You answer the technical questions and let him make the policy decisions and don't be amazed if he comes out my way.

Jefferson wrote extensively on a concept that he had called the insolence of office. This is a feature that comes on bureaucrats who are just ordinary people but once elevated into office they really don't see why they should suffer the indignity of having the respond to mere citizens. I don't even have an affiliation with an environmental group, so I am the merest of citizens. But I want you to trust me and answer me fully, candidly, and in good faith. I sense that left to your own devices, you would do this. So please, just do it. Know that you are serving the nation at least as much by answering me as by forging ahead with the MOX program while disregarding my points. I've been doing this work for 15 years. I have 10 years of training in science and a 160 I.Q. I've put a lot of thought into the points I've presented and talked about them at some length with other thoughtful people including some at NRC. Please think of me as a colleague not an opponent. I have never gone to the press, never published a book or an article on this subject, never spoken to the Congress except on radioactivity as a medical issue. So give me the benefit of the doubt ---- and real answers.

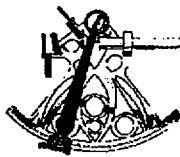
Thank you for your time and consideration.

Sincerely,



Robert Gary, Esq.

MD149



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Howard Canter  
(Attn: Mr. Dave Knowlton)  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
Washington, DC 20585

July 30, 1998

Dear Messrs Canter and Knowlton,

I have some additional objections and questions related to the MOX scheme based on my review of DOE/EIS-0283-D which Dave Knowlton was kind enough to send to me on July 22, 1998.

As you will recall from my compilation of letters The Case Against MOX dated September 1, 1997, there was strong objection to DOE/EIS-0229 page M-483 where the chance of a serious accident was rated as 1 in 10,000,000.

This is what I call Dr. Norman Rasmussen style statistics. You break the hazardous event down into 20 parts. Then you assign the smallest conceivable number that any group of lawyers at DOE might make a case for to each of the parts. Then you multiply the parts so that 1/1000th of 1/10,000th, or 1/50th, or 1/200th etc etc until you get a figure like 1 in 10,000,000 for the probability of anything going wrong.

This is false, you see? We have about 107 reactors in the U.S. and there are about another 50 in the world, so figure 200 reactors and nuclear plants of various kinds. This is 1998, and the nuclear programs got started in about 1957 so figure 40 years of experience with 200 reactors, that's 8000 reactor years. We've had five serious accidents that released substantial radiation offsite. So figure 5 in 8000 reactor years. There's no way that you can suggest that the chance of a nuclear accident that releases substantial radiation offsite is 1 in 100 Billion, or that the maximum exposure that anybody could be exposed to is 1 ten billionth of a dental x-ray.

Ask yourself this question. If a reactor blew up sky high every year for the next ten years and killed 100,000 people each time, how would your figures given in your EIS change? Now you either have an answer to this or your don't. If you are honest, I think you will tell me that the figures would not change. You would still say that a nuclear accident at a facility would be projected at one every 100 billion years -- right. And why? Well,

FD108

#### FD108-1

#### Human Health Risk

DOE acknowledges that risk can be defined and measured in different ways. The risk assessment methodologies and assumptions employed in this SPD EIS are prepared and reviewed by qualified professionals and are also subjected to independent review. DOE believes that these methodologies and assumptions adequately predict the risk of reactor accidents. Section 4.28 was revised to discuss the potential environmental impacts of operating Catawba, McGuire, and North Anna, the reactors that would use MOX fuel. Calculations are performed with codes that have been used and verified repeatedly over a period of several years. These codes are also periodically updated and calibrated.

1

1 it's because your numbers have no relationship whatsoever to the real world or anything that has actually happened in the real world in the last 40 years. Your figures relate to hypothetical imaginings in the mind of Dr. Norman Rasmussen a person paid by the government to provide his version of the truth which reasonable persons of ordinary intelligence might well question.

2 Now comes the Department of Energy with its program that Dave Knowlton says is a \$2 Billion program and which I say is going to cost \$300 Billion. This program requires building a facility to create MOX pellets. This is a whole new venture for the USA. We don't have any plants like that. This would be a whole new kind of nuclear facility for us.

3 A concern that a reasonable person might have is, "What sort of health effects might be generated by such a novel venture?" "Could there be bad health effects?" "What is the likelihood of producing bad health effects, or maybe killing a few hundred thousand Americans by uptake of alpha emitting radionuclides, not that the government hasn't done this before, (see Johnsrud v. Carter 620 F.2d 29 and Punnett v. Carter 621 F.2d 587).

Who carries the ball for the government on this point which no person of ordinary good sense would say is a detail. We look to Volume 1 Part 8 page 7-4 to discover that the Human Health Risk issue is handled by a person with a B.S. degree received in 1991.

4 Do I think that after collecting many trillions of dollars from U.S. citizens every year the government couldn't get a Ph.D. to say the same thing? No, I realize that in an "anything for money" world the government could get a veritable Niagara Falls of Ph.D.'s to say prosaically the same things that this very youthful Bachelor's degree holder has said, and I assume that he is operating in the best of good faith, and doing as he was taught in the best way he can. What I say is this. It's not adequate. DOE has no rational basis to do the calculations this way. There's not a trillionth of a billionth of a chance that one person could get a hundredth part of a dental x ray from this scheme and DOE knows it. This project is dangerous, and there's no way to know exactly how dangerous it is.

5 But consider this point. When Dr. Norman Rasmussen was setting the precedent for non-rational calculation of risks based on hypotheticals projected on hypotheticals projected on hypotheticals and with no regard whatsoever to actual experience in the real world, the one we live in, people were much more reliable than they are now. We live in a dysfunctional society. Over half of the jobholders in this country are marginally dysfunctional in one way or another. There's some part of their jobs that just doesn't get done, maybe they are slacking, or asleep at the switch, or corrupt nepots that got their jobs on a non-merit basis, or illiterates that weren't pick up in the training program, or one thing or another. Every serious nuclear accident so far has occurred by the dumbest and most

FD108

FD108-2

MOX Approach

It is true that MOX fuel has not been produced commercially in the United States. The fabrication of MOX fuel and its use in commercial reactors has been accomplished in Western Europe, and this experience would be used for disposition of the U.S. surplus plutonium.

Because cost issues are beyond the scope of this SPD EIS, this comment has been forwarded to the cost analysis team for consideration. The *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998) report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

FD108-3

Human Health Risk

This SPD EIS identifies and analyzes potential human health impacts that might result from construction and normal operation of proposed surplus plutonium disposition facilities. The Human Health Risk and Facility Accidents sections in Chapter 4 of Volume I discuss the effects on the public due to potential radiological releases. DOE policy places public safety above other program goals, and requirements have been established to protect the safety and health of the public. The protection of members of the public against accidents is considered by DOE in the design, location, construction, and operation of its facilities. Additionally, independent external oversight of activities is provided by the congressionally mandated DNFSB. The MOX facility and the reactors selected to use MOX fuel would be licensed and monitored by NRC.

FD108-4

Human Health Risk

Risk assessment methodologies, assumptions, and personnel qualifications are addressed in response FD108-1.

unpredictable of human errors. But none of those people are going to be working in the MOX plant right? The MOX plant is going to be build in the Dr. Norman Rasmussen Utopia where all persons perform their functions within predictable guidelines for incompetence, stupidity, malice, and criminality. That's the world where there's a billionth of a trillionth of a chance that anybody could ever be exposed to as much a one dental x ray's worth of ionizing radiation because of the MOX scheme.

I have tried to be reasonable with DOE. I have offered to come and present my views in person and be questioned on them by expert members of DOE's staff. I have submitted protests against this ultra-hazardous program for three years, to no effect. I have suggested and in fact outlined in detail a higher and better use for the Plutonium-239 in question here. Furthermore, I have always supported DOE when they were right. I have vigorously supported the Yucca Mountain Project. I have vigorously supported the vitrification or filled canister or immobilization alternative (the part of the dual track that doesn't involve making MOX pellets and putting them in commercial power reactors near American cities where lots of Americans live -- so far). As a person of reason I can only appeal to other persons of reason. If I were a person of influence, perhaps I could appeal to persons of influence, but that avenue is not open to me, due to circumstances of life.

DOE is a law unto itself. It does what is decided by DOE. It is presently in transition because of the appointment of an extraordinarily able person -- Ambassador Richardson -- to be its Secretary. There is now an opportunity for the technology mismanagement errors of the past two Secretaries to be rectified by the use of judgement and reason and good sense, which Bill Richardson has in abundance and has proven on 100 occasions. So let's do it. Let's make changes. Let's put the red light to bad ideas of the past and let's go ahead with what's good. Please answer my questions. Please meet with me and hear me out. Please redress my grievances.

Sincerely,



Robert Gary  
Attorney at Law

cc: Ambassador Bill Richardson  
Senate Energy Committee  
Secretary Carol Browner

FD108

FD108-5

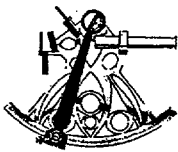
Human Health Risk

The analysis and data in this SPD EIS and the supporting conclusions of minor impacts and sufficient safeguards have been prepared and reviewed by qualified professionals and also subjected to independent review. Calculations are performed with codes that have been used and verified repeatedly over a period of several years. These codes are periodically updated and calibrated. In regard to the MOX facility, DOE intends to design, construct, and operate it in such a fashion as to provide a level of safety that meets or exceeds applicable Federal, State, and local requirements. The MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program.

FD108-6

DOE Policy

DOE acknowledges the commentor's support of Secretary Richardson, as well as interest and participation in the surplus plutonium disposition program. DOE's decisionmaking process takes into account all public input, and each comment received is given equal consideration.



Gary Research  
Operations Research  
Robert Gary, MBA, JD, Principal Investigator  
2211 Washington Ave. Silver Spring MD 20910-2620 Tele: (301) 587-7147

Howard Canter  
(Attn: Mr. Dave Knowlton)  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
Washington, DC 20585

August 3, 1998

Dear Messrs Canter and Knowlton,

I have some additional comments that I would like you to take into account when you answer my letters on the subject of MOX of the past two months.

I have criticized the mathematics used to assess the probability of a serious escape of plutonium offsite from the proposed MOX plants (three types). This offsite migration of Pu-239 might be expected to cause radiogenic cancers, particularly if Dr. Goffman and Dr. Tamplin's "hot particle" theory is true as it applies to microscopic particles taken up into the lung a delivering an alpha dose over several years with high linear energy transfer and high ionization and thus high carcinogenic potential. This has been observed in people who were at NTS in the 50's even though I know the government will not admit this truth.

It would be fair and correct for me to proposed some alternative mathematics, so here is what I suggest. In 1940 when they built Hanford they came up with very detailed mathematics to show that it was safe. The isodose curves of alpha emitters around Hanford today speak for themselves and tell a different story. Whoops, well I guess that one wasn't safe. In the 1950's and 1960's when they built Rocky Flats and Pantex, again there were mathematicians with elaborate tables of numbers to suggest that the chance of any substantial leakage of alpha emitters offsite was 1 in 10,000,000, and such a thing might be expected to happen once every 10,000,000 years at the most. Well now it's only 40 years later, not 10,000,000 years, and there's been a fire at Rocky Flats and there have been major MUF's at Pantex, and Dr. Edward Martell, of Boulder Colorado tells me that the isodose curves around the Rocky Flats facility can be charted across several states eastward from the site. Whoops, I guess those weren't safe either.

So here's some alternative math for you. Please remove the math that's in the environmental impact statement and put this in its place. The probability of a major escape of alpha emitters from

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#### ORD18-1

#### Human Health Risk

Because a "serious escape of plutonium" from a MOX facility is not defined, it is assumed to be an amount that potentially causes LCFs among the population within 80 km (50 mi) of a site. Of all the MOX facility accidents analyzed with a scenario frequency of greater than 1 in 10 million per year (Appendix K), only the aircraft crash at Pantex and the beyond-design-basis earthquake at each of the sites would be expected to cause LCFs in the public. For the earthquake, there could be up to 24 cancer fatalities; for the aircraft crash, up to 27 cancer fatalities (Tables K-8, K-9, K-13, K-11, and K-19). The probability of a serious escape of plutonium off the site for these two accidents is quite small. The probabilities have been shown to be below 1 in 1 million per year for the airplane crash and below 1 in 10,000 per year for the earthquake, based on scientifically accepted prediction methods discussed in Appendix K.

The contention that the alpha particles would cause hundreds or even many thousands of cancers has no scientific basis. The potential impacts on people living in the areas of the candidate sites for the MOX facility have been calculated using models accepted within the scientific community. The MACCS2 computer program (Appendix K.1.4.2) was used with conservative input parameters. For example, it was assumed that the meteorological conditions at the time of the accident were so severe that they would only be exceeded about 5 percent of the time. The doses predicted by MACCS2 were converted to LCFs using the risk estimators discussed in Appendix K.1.4.3. These risk estimators are probably on the conservative side (i.e., they overpredict adverse health effects), but are accepted within the scientific community as reasonable, predictive values. The basis for the "high carcinogenic potential" is not accepted by the scientific community at large.

DOE acknowledges that past practices at its sites led to environmental contamination with some potential for health effects on local residents. However, no major adverse impacts to the public or workers as the result of operations at Hanford, NTS, Pantex, or RFETS—sites specifically cited by the commentator—have been demonstrated (refer to Sections 3.2.4 and 3.4.4 of this EIS for Hanford and Pantex and to Sections 3.3.9 and 3.8.9 of the

the proposed MOX plant(s) over the next 50 years if they are built, is around 95% to 100%. The probability that substantial quantities of Pu-239 will be airborne, be suspended, and be resuspended over the course of decades after those quantities escape from the proposed MOX plant is 100%. The probability that those particles will cause cancer, specifically lung cancer, but also soft tissue cancers in hundreds, perhaps thousands, perhaps tens of thousands of Americans living in several states over the 50 year period is substantial, which is to say more than 50% at the low end of the range and more than 10% at the high end.

The probability that the safety assurance calculations that were given in 1940 for the Hanford Plant were correct is zero. The probability that the safety assurance calculations that were given for the Rocky Flats and Pantex Plants were correct is zero. The probability that the tables of numbers in your current EIS for the proposed MOX plant, based on the same Rasmussen style approach, are correct is close to zero.

Beyond the infirmity of its math, the EIS fails on several other points which I should make more explicit as well. I see no designs for the facilities that will contain the low level waste over the next 250,000 years. But when those hot particles get into the environment, if they do, harm is done, you see? Those millions of cubic yards of low level wastes have to be guarded too, for 250,000 years, otherwise they will be acquired by terrorists or other malefactors, or they might be, creating a national security threat, you see? That's where your \$2 Billion project starts moving toward a \$300 Billion project. You know when they built Hanford they said that was going to be a \$2 Billion dollar project too, but we've spent \$50 Billion there in 60 years and our costs there have only just begun. See your EIS is not for the whole system, it's just for the parts you wish to present, and of course there are hundreds of pages going on and on about the sociological economic and racial breakdown of the people around the proposed plants. You've done a marvelous job from a civil rights perspective, but a terrible job from an engineering perspective, but you see plutonium is very unforgiving stuff, it may respond reluctantly to our best engineering efforts but it cares not one whit about civil rights or environmental justice or any of our other fuzzy notions about what counts in disposing of it.

I have raised another point that I fear you will not be sensitive to. This is a macro-project. It takes place over many decades. It has consequences reaching well beyond the next century. I have said that we have a problem in that connection arising from failures in our educational system and in the entire process of inculcating ethics into young people. Included here would be the work ethic in the Puritan sense, but also the competence ethic, the truthfulness ethic, the drug-free ethic, and the scientific ethic. Our particular society is not producing the kind of people it produced from 1945 to 1969. You may think you can shrug that off, but it is an important point. It suggests that we should be

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*Storage and Disposition PEIS* for NTS and RFETS). A number of Federal and State agency agreements are in place to further reduce or eliminate sources of contamination, conduct additional research on health effects, and take corrective actions, as appropriate. DOE is committed to reducing any human health risks at its sites to ALARA levels, or levels agreed to with the appropriate regulatory agency. Any surplus plutonium disposition facilities would be designed, constructed, and operated to achieve these goals.

ORD18-2

General SPD EIS and NEPA Process

DOE acknowledges the commentor's concerns regarding LLW disposal. Chapter 4 of Volume I and Appendix H address impacts of the construction and operation of proposed surplus plutonium disposition facilities on the waste management infrastructure at the sites. DOE has existing arrangements for LLW disposal at all of the candidate sites. Generation of additional LLW by activities associated with surplus plutonium disposition is not expected to substantially impact these existing arrangements. Impacts at the waste disposal facilities that would be used are evaluated in the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F, May 1997) and other site-specific NEPA documents.

LLW disposal facilities do not require special security to avert the diversion or theft of waste; the very low concentrations of special nuclear materials in waste (less than 100 nCi/g) would not be an attractive source of bomb-making material.

ORD18-3

General SPD EIS and NEPA Process

DOE acknowledges and shares the commentor's concern regarding the availability of highly qualified technical personnel. Accordingly, it has initiated a number of programs in schools throughout the United States to encourage mathematics and science literacy and to promote entry into technical fields. Fortunately, many highly qualified and dedicated people, of all ages, work in the DOE complex to support the surplus plutonium disposition program and other DOE missions.

GARY RESEARCH OPERATIONS RESEARCH  
ROBERT GARY  
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leery about setting in motion projects that will require a lot of people over a long period of time to perform just like the pros did in America's decades of technological and engineering preeminence. You say that the Europeans have lots of experience with this sort of technology, and I agree they do, but let's look at the Europeans, and particularly the French in this connection. Everybody that touches any control element in a French reprocessing plant is a graduate of Ecole Polytechnique. This means they are the cream of the French educational system, and they are all members of the military. The French may be to the left of us politically, but in this area they are a national security state. We stopped being a national security state when the Berlin Wall came down in 1989. Since then we have been a civil rights state. Our dedication to privacy of information is so intense that it overrides every other consideration for almost every job in the country, even jobs at the CIA if the Ames and Pollard cases are any indication of what goes on there. Not only are we not producing capable people to manage this technology over the next five decades, but we are not producing reliable people, or to be more precise people whose reliability is known or can be ascertained to a very high degree of certainty. You can't even trust your bag to a luggage handler at an American airport -- when they get it out of sight they take anything they find of value. You can't trust an engineer of a train to stay awake, or a truck driver to stay off pills, or an HMO or nursing home to be honest in rendering their services. We, the great "service economy" are in fact becoming a nation of negligent, sloppy, careless, untruthful, and often lazy people. This matters because good technology management requires a match between the tasks to be accomplished and the personnel who will perform those tasks, and plutonium is very unforgiving stuff -- you think your boss doesn't take any excuses -- but plutonium is the sternest taskmaster of all -- it takes no excuses. We are rapidly becoming a country of sea-lawyers who spend half our days making excuses for the things we didn't do, or didn't do right. This creates a mismatch. The mismatch creates a reliability issue on which you have no numbers. No numbers from the past will do (even if they were right, and they are not). New era, new people, new strengths, weaknesses, threats and opportunities for technology, but MOX plants are not among the realistic opportunities from this point looking forward with all the discernment that an informed, observant, intelligent mind can marshal.

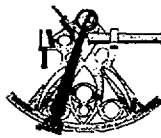
I'm trying to clarify my issues to make them easy for you to address and deal with. If you understand my points deeply, you might be affected by them -- which, after all, is the intent of the EIS process. But even if you just want to defend MOX right down the line, at least you will be able to honestly and squarely address the gravamen of the positions I've taken in opposition.

Sincerely,



ORD18





Gary Research  
Operations Research  
Robert Gary, MBA, JD, Principal Investigator  
2211 Washington Ave. Silver Spring MD 20910-2620 Tele: (301) 587-1147

2 Sept 1998

Howard Carter —

Enclosed is my memo of my meeting  
of Messrs. Nutton and Lygelman at  
your office today.

I am deeply impressed by the  
quality of these individuals.

I no longer oppose the MOX Program  
You can count on my full support.

Sincerely,

MD150

MD150-1

MOX Approach

DOE acknowledges the commentor's full support of the MOX approach. It is unclear what accident the commentor is referring to in his discussion of accident frequencies. However, it seems that the figure of 1 in 10,000,000 per year is from the *Storage and Disposition PEIS*, and not the SPD EIS. There are only three instances of a 1 in 10,000,000 per year figure being used in the Facility Accidents section of the SPD EIS. It is used to exclude SRS from assessment of consequences due to aircraft crash. This is in accordance with DOE-STD-3014-96, *Accident Analysis for Aircraft Crash into Hazardous Facilities*. It is used to exclude vault material from the assessment of aircraft crash consequences into the pit conversion and MOX facilities at Pantex. This is also consistent with DOE-STD-3014-96. Finally, it is used as a lower bound for the frequency range of total facility collapse as a result of a beyond-design-basis earthquake. The upper frequency bound for this accident is assessed to be 1 in 100,000 per year. Details on accidents developed for the SPD EIS can be found in Appendix K.

GARY RESEARCH OPERATIONS RESEARCH  
ROBERT GARY  
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Memo of Meeting at DOE (1000 Independence Avenue)  
2 September 1998 (1300 hours till 1400 hours)  
between  
Robert Gary, Esq.  
and  
Mr. J. David Nulton and Mr. Andre Cygelman (DOE)

1. On the issue concerning the origin of the MOX idea: The idea was around in DOE prior to the arrival of Bob Alvarez. It predated the Clinton Administration. The Russians actively selected the MOX idea over the canister and the bore hole ideas and said that it was the MOX alternative or no deal. So, we had the idea before the Clinton appointees got to DOE. The Russians knew about the MOX alternative in 1993. And they actively selected it as a basis for future negotiations to dispose of fissile materials. (This deals with interrogatories/requests 1-5)

2. On the low level waste issue it was pointed out that first the federal government out of the Treasury would pay for on-site storage of low level wastes from the MOX plants, which are actually projected to be a fairly small volume. Low level waste from the reactors would be paid for by a consortium of utilities (indirectly by the ratepayers of participating utilities, I suppose). A second area of concern about low level waste was its use as a toxic material in the hands of terrorists. DOE representatives pointed out that for that sort of use it would be far cheaper to buy plutonium on the black market than to purloin it from a low level waste dump and then purify thousands of cubic feet of wipes, and gloves, to try to recover microscopic amounts of plutonium. Also mentioned in this context was my position that the MOX security benefit was a chimera because the French could trade us metallic Pu for spent fuel bundles anytime, and they would make a deal to do so on 24 hours notice. This position was refuted by the fact that the reprocessed metallic plutonium would contain Pu-240 which makes it unusable for reactors but unusable for weapons. Pu-240 has an early releasing neutron which in a weapon would cause pre-detonation and thus a nuclear fizzle or misfire. The isotope Pu-240 would not be separated from Pu-239 in the French reprocessing as it currently exists. So the idea that we could trade our way back to weapons grade metallic plutonium anytime we wanted is false. Thus the security benefits of the MOX program are authentic, and I was wrong about this. (This deals with interrogatories/requests 6-12)

3. On the interplanetary propulsion issue it was pointed out that any needs that might exist in the 21st or 22nd century for plutonium-239 for interplanetary propulsion could be easily satisfied by recovering it from spent fuel using the advanced technologies that will be available in those centuries. The issue of quelling the Russian security threat posed by loose plutonium on the world market exists right now and is an immediate, clear and present danger. Therefore, since the intent of the MOX program is primarily to quell this immediate threat, which if not

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quelled will result in grave environmental consequences, it does not behoove us to worry about the precious national asset aspect of plutonium as a propulsion modality in the 21st or 22nd centuries right now. With new future technologies, we will have what we need for those (space propulsion) purposes. Right now, we need to dispose of this fissile material so that the Russians will do the same and it will not be available on a world black market. In this connection I responded, "Why not just buy the plutonium from the Russians?" DOE said, "The U.S. environmentalists don't want additional plutonium coming into the U.S." I suggested that an exchange of cash for Pu would be appropriate and any amount up to an including \$100 billion would be reasonable if it solved the problem. I also said that this would mean that we ramp up our MOX program, and it would make a Russian MOX program unnecessary (and a Russian sodium cooled breeder program impossible). [Note: I would have no objection to ramping up our MOX program if the program as practiced in the U.S. were truly safe. I certainly would have no objection to bringing Russian bought Pu into the U.S. or the expenditure of funds required to do that, if the deal really got rid of the problem once and for all]. This general discussion disposed of interrogatories/requests 13 - 20.

4. On the subject of the 1 in 10,000,000 figure we had a conflict that was not resolved at this meeting. I suggested that the figure be revised in the final version of the EIS to read 1 in 1000 chance of a serious accident with significant offsite distribution of Pu. DOE said that much had been learned since the accidents at Hanford, Pantex, and the several fires at Rocky Flats, so that even though those prior accidents tend to indicate a higher probability of a major leak from the proposed MOX plants, that fact is partially offset by the fact that the way we develop safety systems and countermeasures and computer models and facility designs is by having accidents and then designing them out of new facilities. The Borax experiments at the Idaho reactor were mentioned in this context. These involved intentional destructive testing of nuclear reactors -- letting them blow up in the desert to learn how and why that happens. Such experiments are not done today, but the same principle applies, which is that safety systems get better as a result of integrating data from past accidents. I said that the 1 in 10,000,000 figure was too high in light of the failures at Hanford, Pantex and Rocky Flats, and that as a prudential matter it would be unwise for DOE to present that figure to the Senate, or try to justify it. The most self-admitted non-expert Senator or staffer would feel completely comfortable rejecting that figure in light of past experience. I also said that a 1 in 1000 figure might just get by using the "better technology, better computer models, more real world experience" argument. I also said that the math should explicitly reflect a Bayesian analysis, (which is apparently the same as updating their benchmark codes), and that it should be signed off on by someone at MIT with 20 or so years of experience teaching post-docs, rather than a holder of a B.S. degree received in 1991. The math, in short, should be

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less astonishing, more intuitively credible, more explicitly presented, and presented by an authority that people feel is highly reliable. I mentioned Dr. Kemeny as an example of such a person. (This part of the discussion disposed on interrogatories 20 - 34).

One document was provided by DOE titled FY 1999 Congressional Budget Request -- Program Mission and which contains the following sentence: "The Administration will not construct new facilities for disposition of U.S. plutonium unless there is significant progress on plans for plutonium disposition in Russia." (emphasis added)

This was interpreted by DOE to mean that although a day for day pound for pound correspondence between the two programs was not required, the two programs were to be on parallel tracks, moving forward and making progress in parallel. This means some sort of rough equivalence of actual plutonium disposition, not day for day, pound for pound, but step by step, beginning by beginning type of parallel progress. Specifically it does not mean that the U.S. goes ahead with a facility in exchange for a Russian promise to go ahead with a facility (or otherwise dispose of their plutonium i.e. by selling it to us, for example). In other words the Russian progress is not "progress on plans" in the sense of progress in making plans, it is "progress on plans" in the sense of progress on implementing existing plans. [Note: It might be helpful to re-word the document, and future documents so that this potential semantic ambiguity is eliminated and replaced by crystal-like clarity]. The next sentence talks about "attaining reciprocal actions on the disposition of Russian surplus plutonium" (emphasis added)

The meeting with DOE was a success in the sense that it reduced five broad groups of objections down to one remaining objection (to the 1 in 10,000,000 figure). DOE's representatives left a strong impression of integrity, knowledge, and policy expertise. I was also impressed by the gravity of the consequences of not going ahead with MOX and by the "time is of the essence" aspect of the situation, which is obviously magnified by current developments in the past 10 days in Russia. DOE has basically converted an opponent to a supporter of the MOX program with the sole caveat that they clean up their numbers on the probability of a serious accident/offsite leak. It would be a good thing if the final version of the SIS said 1 in 1000, but DOE actually delivered a technology on the ground with a probability of 1 in 10,000 or 1 in 100,000. That way they say less but do more, and are the real good guys. I believe this is achievable. If so, it would be far better to scale the MOX program up, or extend its period of operation so that it could dispose of all U.S. and all Russian excess plutonium rather than embark on a world where the Russians start their own MOX program for light water reactors, or an even worse world where the Russians use their Plutonium in sodium cooled breeder reactors. It would be entirely fair for DOE to lay out the risks of those alternatives, and the risks of

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having Russian plutonium go on an international black market as part of the presentation on MOX and its relative merits. Whatever risks are present in MOX cannot be rationally assessed in isolation, but only in relation to the risks of the alternatives. The EIS document should be expanded to present these allelic risks even though they are not required to be presented in an ordinary EIS. This case is different. We are not the only actors in this environment, and our MOX program has as its basic purpose the control of the actions of one of the other actors whose actions might gravely affect the environment. Because of the unique circumstances in this case, the EIS should explicitly incorporate the full panoply risks and specifically the avoided Russian risks which acceptance of the U.S. MOX program entails. This would lay a foundation for the expansion of extension of the MOX program in the event that a Cash for Pu transaction with the Russians can be arranged. [Note: Time being of the essence, it might be reasonable for the President to open negotiations for such an exchange while he is in Moscow today, or in the diplomatic exchanges that will occur over the next 30 days implementing the statements made by President Clinton while he is in Moscow i.e. "The U.S. plans to give you money", or words to that effect -- the Russians have to stay on the course of free market reforms and sell their Pu to us for cash. They get what they need. We get what we need. MOX goes forward -- one program for all the planet earth, done by people who know what they are doing, and have been screen in a Personnel Reliability Program at the Rickover level based on a national security state not a civil rights state. Congress has to pass legislation that permits applicants to the MOX program to waive away all of their rights under all of the civil rights laws -- just like it was in Rickover's Navy. This danger of personnel unreadiness needs to be taken seriously. We don't have the same sort of people in the U.S. today as we had in 1945-1969. The culture has changed. MOX requires, not merely good people, but reliably competent people. Not merely reliably competent people, but people whose reliable competence can be established and verified to a very high degree of certainty in advance. This is impossible in a privacy oriented civil rights state. In other words if you want to build down the dangerous surplus plutonium left over from the days of the U.S. as a national security state, you need to create an enclave of people who are transported legislatively back in time to the rules, habits, laws, and rights of persons living at an earlier time -- say 1950. Only thus can the MOX program avoid the effects of modernity. Even thus recruitment will be extraordinarily difficult and hazardous from the perspective of making a reliability assessment error. The CIA and Naval Academy have already experienced this. Secretary Cohen is an expert on the subject, and I think would verify and confirm what I say here.

I affirm that this document, created from memory one hour after the meeting, is true and correct to the best of my knowledge, information and belief.

*Robert Gary*  
PA #125552

MD150

3-275

Comment Documents and Responses—Maryland

Memo for David Nulton at DOE  
Reiterating in writing some of the more important points from our  
POMCON this day September 18, 1998 approx 1500 hours  
From Robert Gary, Esq.

1. The EIS documents currently being produced on the MOX Program are in full regulatory compliance with the rules and statutes governing such documents but they are inadequate nonetheless.
2. NEPA and the entire body of EIS regulations came into existence during a period in American history when environmental impacts could be considered on a project centered and national basis. We are now living at a time when environmental impacts must be considered on a problem centered and global basis. There is no issue where this is more clear than the issue of controlling weapons grade plutonium worldwide. Accordingly, where an international agreement focuses on the global problem of black market plutonium and the probable bad environmental and human health consequences from failure to manage the plutonium on a global basis, it is highly appropriate for the Environmental Impact Statement to give communications primacy to this fundamental reality. Specifically, it is legally, morally, and politically correct to outline in the plainest terms the environmental consequences of not solving the problem on a global playing field. In particular it is correct to portray the international black market in weapons grade plutonium, the sellers, the entrepreneurs, the buyers, and the ultimate users. Furthermore, it is highly appropriate and prudent to present in some detail the environmental and health effects likely to be produced by plutonium explosive devices in the 1 to 100 kiloton range if detonated in Washington DC, New York, Chicago, Dallas, San Francisco, Boston and Los Angeles. To permit ancient NEPA regulatory provisions designed to prescribe the minimum content of EIS documents several decades ago to be a limit and a maximum content for an EIS on today's MOX Program is to disenable the DOE from successfully marketing this vital program through its most prominent and most widely read communications device. If it is not an actual Federal crime to present DOE's strongest arguments and reasons in support of the MOX program in the EIS then it seems to me it is a moral, logical, and policy imperative to do so.
3. Persons from Greenpeace or other environmental organizations who have no responsibility of any kind except to salve their own sense of "moral" righteousness must be presented in the clearest terms with the fact that MOX is a program for world peace, and that peace is good for the environment and that nuclear detonations in the atmosphere are bad for the environment. Blowing up New York City would be a bad thing for the entire ecological web in the United States and other places. Owls, whales, and snail darters would be killed. The false and artificial distinction between what happens in the USA and what happens on planet Earth is one that environmentalists should not make for two reasons. First, it contradicts their own ethics,

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MD286-1

General SPD EIS and NEPA Process

DOE acknowledges the commentor's views on the rationale for the surplus plutonium disposition program and the value of a global focus in related communications. Section 1.2 discusses the purpose of and need for the proposed action, including some of the international aspects of surplus plutonium disposition. It is not the purpose of this SPD EIS to market DOE's program for the disposition of surplus plutonium. The NEPA process does provide an important mechanism for obtaining public input prior to disposition decisions. In compliance with NEPA and the rules that implement that act, DOE prepared this EIS by obtaining comparable data on all of the alternatives, analyzing the data in a consistent manner using established procedures, and presenting the results in a full and open manner.

very plainly stated since the days of Rachel Carson and Silent Spring. We have been talking for years about the use of pesticides like DDT in South America. South America is not part of the USA. And what about the rain forests in Brazil? Has Greenpeace taken the position that it's only what happens to rainforests in the USA that they are concerned about -- they don't care what happens in Brazil, or have they taken some other position? The record is clear. Second, the environmentalists are demonstrating the "ethics of intention" rather than the "ethics of responsibility" when they try to distinguish between plutonium in the USA and plutonium in Russia. They think that if their intentions can be construed as "good" from some perspective, then there is no responsibility that attaches to the policy implications and consequences of what they say. This is a sort of mystical approach to the management a pressing global life and death problem. It is the sort of approach taken by persons who do not expect to be listened to, and should not be.

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4. After January of 1999, when the new Congress takes their seats, there will be very few people on Capitol Hill who will pay the slightest attention to Greenpeace or any environmentalists. Therefore DOE should not worry about trying to convert them to a pro-MOX position. MOX is a program for peace. Peace is good for the environment. Those messages need to be taken directly to reasonable people and they can be, but only by becoming much more creative with the EIS communications opportunity. The environmentalists need to be put to their proofs. They should have to show that the risks of the MOX program (if done entirely in the USA, as I suggest) are greater risks to human health and environmental integrity than the risks inherent in an uncontrollable international black market in weapons grade plutonium (Pu that is 96% free of Pu-240, Pu-241, and Pu-242). We know that terrorists have planted bombs at the World Trade Center and at the Murrah Federal Building. We know that the Lincoln Tunnel was also on their target list. What would the environmental consequences be if one of those bombs were say a 10 kiloton device? That information has a right to be in the EIS for the MOX program. Why? Because it is your best and strongest argument for the program. It tells the real story of why you want to do the program. Readers of the EIS have a right to get the real story of why you want to do the program. Decisionmakers have a right to get your first line argument, your varsity presentation, your alpha team rationale, not some watered down, desultory, detail driven, infodump created by blind, uncreative, and rigid adherence to what are imagined (by lawyers) to be the technical requirements of NEPA and other statutes governed EIS document. If it's not a crime for DOE to put out and effective and success-oriented document, then it's a crime against reason not to do so in this case. The fate of the world hangs in the balance. Furthermore, I don't think you should confine yourselves to documents. I would put a major effort into a 30 - 45 minute video designed for an informed senior staffer on the Hill (who has no time or attention to give to a 5000 page EIS). I would make the video a formal part of the EIS. I would allocate 5 or 10

2

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MD286-2

General SPD EIS and NEPA Process

DOE acknowledges the commentor's views on the environmental rationale for the surplus plutonium disposition program and the need for effective public education in that connection. Chapter 4 of Volume I presents the potential environmental impacts of each alternative for accomplishing the proposed action.

minutes in the video to all the stuff that's in the existing EIS documents (ineffective in terms of advocacy). The balance of the time would focus on the important information concerning your real and best reason for wanting the MOX program. What does Bin Laden look like? What sort of ideas are in his head. What about Saddam Hussein, and Muhammar Quadaffi? That sort of context is required in order to appreciate the significance of an international black market in weapons grade Pu-239. Once the predicament has been presented, the MOX program becomes evident as the most feasible and most reasonable way to prevent the predicament from becoming a case of mass casualties. You should show pictures of what mass casualties look like -- maybe some of the ABCC black and whites taken after Hiroshima and Nakasaki. Now you show that although the MOX program contains its own risks and costs, those risks and costs are far smaller than the risks and costs of not going ahead with it. This sets up the metes and bounds of any rational discourse about MOX. People who want to oppose you must show that they have a better and more viable and less risky idea -- something more cost effective --- something more ethical. If they can't do that, they have no traction in opposing MOX. Senators will not be attracted to mystical arguments based on feelgood rationales if they can compare such arguments to your best argument. Congressmen want to live. Policymakers, as a rule, want what's best for the USA. Their more intelligent senior staffers are the same way. Anybody living in Washington DC is bound to have some visceral connection to your best argument, if only you put it forward, as you did with me.

2

DOE must advocate effectively for this worthy program. It must disenthral itself from the advice of lawyers whose only priorities are narrow bureaucratic compliance with outdated regulations unrelated to this unique program and its vital global goals. You need Mr. Ken Burns not Mr. Can't Do Bureaucrat. You need to communicate, not merely comply. EIS is your opportunity to do that. The foundation that has been laid so far is not wasted. You've gotten the narrow compliance part out of the way. Now it's time to put your real point across. If you could do it with me in 90 minutes, you can do it with any rational person, no matter how pro-environment or anti-nuclear they start out.

I recognize how intelligent you and Andre are, and how moral. I earnestly trust you will take to heart the things I say. Take them up, will you please, with Mr. Howard Canter. Given the opportunity, I would do more than talk about these things, I would make them happen.

Signed,

  
Robert Gary, Esquire

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**Comments of the Institute for Energy and  
Environmental Research (IEER) on:**

**The Department of Energy's  
*Surplus Plutonium Disposition Draft  
Environmental Impact Statement*  
July 1998  
DOE/EIS-0283-D**

Anita Seth, Global Outreach Coordinator  
Hisham Zerriffi, Project Scientist  
September 1998



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**Background/Introduction**

At the end of the Cold War, the United States and Russia face an unprecedented and unexpected problem: surpluses of plutonium and highly enriched uranium (HEU), the two key materials used to make nuclear weapons.

The more difficult of the two is the surplus plutonium and the question of converting it into forms not usable for making nuclear weapons. The two most technically advanced options to meet the spent fuel standard are to immobilize the plutonium in a ceramic or glass form with high level radioactive waste to form a radiation barrier to theft or to create nuclear reactor fuel with it and use it in a commercial reactor (MOX). It should be noted that the MOX option does not "burn" the plutonium destroy it. While some of the plutonium will be fissioned in the reactor, plutonium is also created through neutron irradiation of the uranium which forms the bulk of the reactor fuel (this occurs in reactors fueled with low-enriched uranium as well). In fact, in some cases the plutonium left in the spent fuel is greater than the amount put into the reactor.<sup>1</sup>

The commonly-used yardstick to measure the resistance to theft and diversion of the final form of plutonium after disposition is the so-called "spent fuel standard." This criterion was identified by the National Academy of Sciences in their 1994 report, and means that the plutonium should be as inaccessible to theft, diversion, and re-extraction as plutonium in stored commercial low-enriched spent fuel. Both immobilization and the MOX program were considered by the NAS to have met this standard. However, the "spent fuel standard" inherently assumes that the plutonium will remain in spent fuel (or whatever form it has been placed into)—that is, that it be slated for geologic disposal. Taking into account the desire of Russia to reprocess its spent fuel and the risk of creating a plutonium economy in both countries, it is clear that immobilization is a better option for meeting the standard.

Minatom has stated very clearly on numerous occasions that it intends to reprocess spent MOX fuel, rendering the "spent fuel standard" effectively meaningless over the long-term. The U.S. appears to be ready to allow Minatom to reprocess spent MOX fuel from the plutonium disposition program. The joint report notes that "...Russia will ultimately recycle any plutonium left in the [MOX] fuel. The U.S. objective of plutonium disposition is satisfied when the isotopic composition of the weapons-grade plutonium have been altered by irradiation, the fuel attains a significant radiation barrier, and the fuel is stored for several decades before reprocessing."<sup>2</sup>

**DOE's Proposed Action**

The Department of Energy analyzes 23 different alternatives in its *Surplus Plutonium Disposition Draft Environmental Impact Statement* to meet the spent fuel standard. The DEIS analyzes the disposition of a nominal 50 metric tons of plutonium (33 tons is contained in plutonium pits from weapons or in a metal form relatively free of

<sup>1</sup> See Table 6-1 of National Academy of Sciences, *Plutonium Disposition: Reactor-Related Options*. (Washington DC: National Academy Press, 1995).

<sup>2</sup> Joint study, p. WR-36-37.

**MD237-1**

**Alternatives**

DOE acknowledges the commentators' support for the immobilization-only approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.

It is true that Russia plans to reprocess the spent fuel resulting from the irradiation of MOX fuel from its surplus weapons-usable plutonium. However, the U.S. position in negotiations with the Russian government has been that Russia should not reprocess the MOX spent fuel until all of their surplus plutonium meets the Spent Fuel Standard. In addition, the future agreement between the United States and Russia would require that any Russian MOX spent fuel reprocessing program be conducted under the oversight of IAEA which is charged with verifying compliance with international nonproliferation policies.

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impurities while the rest is in various other forms). The various alternatives analyzed fall into two basic categories: Immobilization and Hybrid Approaches.<sup>3</sup>

The Immobilization approaches would encase the plutonium (after initial processing to render it into a suitable form – plutonium dioxide) in ceramic discs which would be placed in steel cans. These cans would then be vitrified (encased in glass) along with highly radioactive waste currently being vitrified as part of DOE clean-up operations. Placing the plutonium in a ceramic mixture and then encasing it in glass makes it difficult to extract (in fact, there is less experience with extracting plutonium from a glass or ceramic matrix than from spent fuel). Encasing it in glass which contains highly radioactive waste makes it resistant to theft as the radiation dose near the glass logs would be very high. It has already been determined that this method of immobilization would meet the spent fuel standard.

The hybrid approach would use the immobilization process for a portion of the plutonium surplus and would manufacture the rest into nuclear power reactor fuel for use in a commercial nuclear reactor. Ordinary reactor fuel used in U.S. light water reactors contains uranium oxide slightly enriched in the isotope Uranium-235 (usually about 3-5% with the rest of the Uranium oxide being mainly U-238).<sup>4</sup> The DOE proposes to produce fuel which would replace the 3-5% U-235 with approximately the same percentage of plutonium oxide. Since the fuel would now be a mixture of plutonium oxide and uranium oxide it is called MOX (Mixed OXide).

The DOE's preferred alternative is a so-called hybrid approach. Approximately 33 metric tons of plutonium would be manufactured into MOX fuel. These 33 tons are currently in the form of weapon pits or metals mainly free of impurities and DOE believes these materials would meet the high purity standards required of MOX fuel. There are, however, some impurities in both the pits and clean metals which would need to be removed (namely gallium). The other 17 metric tons of material is in a variety of other forms. While they contain weapons-usable plutonium, these materials would require significantly more processing to meet the MOX requirements according to the DOE. Therefore, this 17 tons would be immobilized.

The preferred alternative would involve construction of a Pit Disassembly and Conversion Facility (PDCF) at either Pantex or the Savannah River Site. This facility would take apart the weapons pits, remove tritium if necessary, convert the plutonium to an oxide form and process it to remove gallium and other impurities. The PDCF would also convert the "clean" metal. The plutonium dioxide would then be transferred to a MOX fuel fabrication facility to be constructed at SRS (transportation would be either inter-site or intra-site depending on whether the PDCF is built at Pantex or SRS). Immobilization of the other 17t of plutonium in ceramic would occur at a new facility at SRS and the Defense Waste Processing Facility at SRS would be used for vitrification in high-level waste.

<sup>3</sup> The reason for the large number of alternatives is differences in siting and whether new facilities would be constructed for some parts of the mission or whether existing facilities can or would be utilized.

<sup>4</sup> Natural uranium contains about 0.711% U-235, 0.005% U-234 and the rest (99.284%) U-238. The enrichment of the U-235 is necessary in order for light water reactors to sustain a chain reaction.

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According to the DOE:

Pursuing the hybrid approach provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Pursuing the hybrid approach also sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus weapons-usable plutonium, as quickly as possible, in an irreversible manner. The construction of new facilities for the disposition of surplus U.S. plutonium would not take place unless there is significant progress on plans for plutonium disposition in Russia. (p. 1-9)

It is, therefore, apparently the Russian view of plutonium as a "national" treasure and their desire to use it in reactors which is driving the United States to use the MOX option. This rationale will be examined further below.

The decision by the DOE to pursue a hybrid approach ignores the clear advantages offered by immobilization and the serious consequences of initiating a MOX program in the United States. The DEIS also has clear deficiencies which need to be addressed including the lack of information on crucial components of the program. These will be outlined below after an overview of the relative costs and benefits of Immobilization versus MOX and a critique of Russia's role in the decision is presented.

**MOX versus Immobilization**

There are a number of technical difficulties associated with MOX that DOE has not adequately addressed. First, is the issue of Russian reactors, which is discussed in more detail below. Second, US MOX plans envision the large-scale use of weapons grade plutonium in light water reactors for the first time. While MOX proponents claim that European MOX programs provide ample experience for the US program, that experience is only using reactor-grade plutonium. Furthermore, full MOX cores, which are assumed in DOE's analysis, have never been used on a large scale.

The Record of Decision for this Environmental Impact Statement will establish whether the United States pursues an Immobilization only approach or a hybrid approach mixing both immobilization and MOX. There are a number of factors which DOE must consider in making a decision, including environmental consequences, cost, schedule for disposition, and proliferation consequences. Each of these major factors will be discussed below. It should be noted, however, that one of the original purposes for pursuing a hybrid approach was to have a back-up technology in case there were problems implementing either immobilization or MOX. However, MOX cannot handle the full spectrum of plutonium requiring disposition. Therefore, this rationale is severely undercut by the fact that immobilization is the only option capable of processing 17 of the 50 metric tons. Given the indispensability of the immobilization option, it would appear more prudent to concentrate energy and resources into this alternative. Back-up should be pursued by developing more than one immobilization option.

**MD237-2**

**MOX Approach**

The operational experience for electricity generation from MOX fuel in Europe is relevant to the proposed use of surplus weapons-usable plutonium in U.S. domestic, commercial reactors. While plutonium from warheads may never have been used in MOX fuel, its behavior in fuel is essentially the same as that of non-weapons-origin plutonium. Plutonium from the different origins is chemically indistinguishable. The difference is isotopic: there is less plutonium 239 in non-weapons-origin plutonium. MOX fuel, regardless of the origin of the plutonium, has a higher flux than LEU fuel, and thus can cause more wear on the reactor than LEU fuel. However, this is taken into account when developing fuel management strategy.

The proposed action assumes that MOX assemblies would be used for a partial, not full, core. Several U.S. commercial reactors are designed to use MOX fuel, and others can easily and safely accommodate a partial MOX core. Core load and safety analyses would be performed, and an NRC license amendment approved, before MOX fuel was introduced into any reactor. Section 4.28 was revised to provide reactor-specific analyses and discuss the potential environmental impacts of using a partial MOX core during routine operations and reactor accidents.

**MD237-3**

**Alternatives**

DOE has identified as its preferred alternative the hybrid approach of using both immobilization and MOX fuel fabrication. DOE has been studying, evaluating, and testing immobilization technologies for some time, and does not believe that it is necessary to develop more than one immobilization technology. DOE is confident that current development resources will lead to timely implementation of the can-in-canister immobilization technology.

The reasons DOE is pursuing the hybrid approach are addressed in response MD237-1.

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Proliferation/Disarmament

DOE's choice of disposition technologies does not take place in a vacuum, and has a great effect on the debate about the worth of commercial plutonium technology around the world. By relying on MOX for a large part of its disposition program, DOE strengthens the arguments of the plutonium lobby world-wide.

The DOE's emphasis on MOX brings it into partnership with European commercial plutonium concerns like BNFL, Cogema, Siemens, and Belgometalair, whose interest is in promoting continued use and production of plutonium, not in plutonium disposition. By supporting these companies with contracts at a time when they are coming under increasing scrutiny and criticism at home, DOE prolongs their survival and severely undermines the long-standing US position against commercial use of plutonium.

The most serious proliferation consequence of a MOX disposition is the acquiescence and even aiding of Minatom in its pursuit of a long-term plutonium economy. A MOX disposition program would provide Minatom with a MOX fuel fabrication facility, the currently missing link in its plutonium infrastructure.

As DOE is well aware, prior to U.S. encouragement Minatom had not supported a program of loading MOX in existing light water reactors. Minatom has instead been a proponent of storage of plutonium with a view to its eventual use in "advanced" reactors and breeder reactors. DOE has argued that moving Minatom from a position of developing breeder reactors to one of using plutonium in light water reactors represents progress in non-proliferation. This is ironic on two fronts. First, it relies on a differentiation between "weapons-" and "reactor-grade" that the US has implicitly rejected with its policy against commercial plutonium development. Second, it takes Minatom from a policy with very little likelihood of success, given the consistent failure of breeder technologies around the world, to a position much more likely to lead to increased use, transportation, and perhaps even production of plutonium in the short term.

In the name of disposition, the US seems not only to be relinquishing its decades-old policy of not using plutonium in commercial reactors, but aiding and abetting Russian plans to build a plutonium economy. The US will not oppose Russian reprocessing of the MOX fuel fabricated from surplus weapons plutonium, provided that it occurs only after several decades, when the disposition program is complete. DOE has argued that a several-decade moratorium on the re-separation of plutonium from spent MOX fuel is a sufficient safeguard against proliferation. But it won't matter whether MOX spent fuel is reprocessed now or in a few decades. So long as the infrastructure for MOX fuel production and reprocessing is created and maintained, there will be plenty of other spent fuel to reprocess and plenty of surplus plutonium to occupy MOX fuel fabrication plants in the meantime.

MD237-4

DOE Policy

The use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. DOE conducted a procurement process to acquire MOX fuel fabrication and irradiation services. The selected team, DCS, would design, request a license, construct, operate, and deactivate the MOX facility as well as irradiate the MOX fuel in domestic, commercial reactors. However, these activities are subject to the completion of the NEPA process.

Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing. Furthermore, selection criteria for the reactors stipulates that they have sufficient operating life to complete the mission.

MD237-5

Nonproliferation

The reprocessing of MOX spent fuel in Russia is the subject of sensitive negotiations between the United States and Russia and is beyond the scope of this SPD EIS. The *Joint Statement of Principles* signed by Presidents Clinton and Yeltsin in September 1998 provide general guidance for achieving the objectives of a future bilateral agreement to disposition surplus plutonium in the United States and Russia. The principles include the acceptance of technology for transparency measures, including

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Thus, the net result of the plutonium disposition program will have been for the United States to subsidize the very thing that it should be against: an infrastructure for a plutonium economy in Russia. A similar infrastructure would be created in the United States since a MOX plant would be built and since the U.S. appears increasingly reluctant to shut down its decades-old military reprocessing plants at the Savannah River Site in South Carolina.

Environmental

The DOE itself has already recognized that immobilization alone is preferable to the hybrid approach from an environmental standpoint. In the Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials final Programmatic Environmental Impact Statement the DOE states:

For normal operations, analyses show that immobilization would be somewhat preferable to the existing LWR and preferred alternatives, although these alternatives, with the exception of waste generated, would be essentially environmentally comparable.

Severe facility accident considerations indicate that immobilization options would be environmentally preferable to the existing reactor and preferred alternatives, although the likelihood of occurrence of severe accidents and the risk to the public are expected to be fairly low. (p. 10, emphasis added)

The hybrid approaches would require at least one extra facility and possibly even two. Under the hybrid option the three facilities would be a Pit Disassembly and Conversion facility, the MOX Fuel Fabrication Facility, and the Immobilization Facility. Under Immobilization only alternatives, the MOX FFF would be eliminated. Furthermore, it appears technically feasible to design a single facility which could undertake both pit disassembly/conversion and immobilization (see below) and should have been one of the options analyzed. The environmental advantages of a reduction in facilities and operations have not been fully analyzed since a single facility alternative is not included in the DEIS. Furthermore, if the DOE decides to use the Defense Waste Processing Facility at SRS for vitrifying the cans in high level waste, the incremental environmental impacts of immobilization may be reduced further. There are no existing facilities which could be taken advantage of for MOX fuel fabrication.

Due to the high purity requirements of MOX fuel the conversion of plutonium pits and clean metal for MOX require additional processing steps which would be unnecessary for immobilization. At the moment the DOE plans to construct a conversion facility which would remove gallium (a major concern in MOX fuel) using a dry process.<sup>4</sup> If the dry process, which is still at the laboratory and pilot stage, does not meet the impurity removal specifications, the DOE proposes using an aqueous process it calls plutonium polishing. The analysis in the DEIS assumes these processes would occur even if the immobilization alternative is chosen, despite the fact they would be unnecessary. Therefore, the DEIS does not allow one to fully compare the environmental impacts of the MOX and immobilization options. A more detailed discussion of plutonium polishing and the DOE analysis of this process is presented below.

<sup>4</sup> See *Science for Democratic Action*, Vol. 5, No. 4 for more on the gallium problem.

appropriate international verification measures and stringent standards of physical protection, control, and accounting for the management of plutonium. The United States would not subsidize reprocessing capabilities or facilities in Russia.

The policy of discouraging the civilian use of MOX fuel has not changed as addressed in response MD237-4.

MD237-6

Alternatives

DOE acknowledges the commentor's concern over the greater cost, economically and environmentally, of the hybrid approach than the immobilization-only approach to surplus plutonium disposition. DOE believes its preference for the hybrid approach has a sound basis.

Section 2.3.1 of the SPD Draft EIS explained that a range of 23 reasonable alternatives remained after evaluating over 64 options against three screening criteria: worker and public exposure to radiation, proliferation concerns due to transportation of materials, and infrastructure cost. These 23 reasonable alternatives were evaluated in the SPD Draft EIS. Two separate facilities were combined in this SPD EIS to form the immobilization facility from those evaluated in the *Storage and Disposition PEIS*. No other combination of facilities was considered reasonable. After the SPD Draft EIS was issued, DOE eliminated as unreasonable the 8 alternatives that would involve use of portions of Building 221-F with a new annex at SRS for plutonium conversion and immobilization, thereby reducing the number of reasonable alternatives to the 15 that are analyzed in the SPD Final EIS. This SPD EIS analyzes the potential environmental impacts associated with implementing the proposed surplus plutonium disposition activities at the candidate sites including alternatives that would take advantage of DWPF at SRS. The results of these analyses, presented in Chapter 4 of Volume I and summarized in Section 2.18, demonstrate that under either the hybrid or the full immobilization approach, the activities would likely have minor impacts at any of the candidate sites.

The reasons DOE is pursuing the hybrid approach are addressed in response MD237-1.

MD237-7Plutonium Polishing and Aqueous Processing

Based on public comments received on the SPD Draft EIS, and the analysis performed as part of the MOX procurement, DOE decided to propose plutonium polishing as a component of the MOX facility to ensure adequate impurity removal from the plutonium oxide. Appendix N was deleted from the SPD Final EIS, and the impacts discussed therein were added to the impacts sections presented for the MOX facility in Chapter 4 of Volume I. Section 2.18.3 was also revised to include the impacts associated with plutonium polishing. No additional aqueous processing would be necessary to prepare the plutonium dioxide for immobilization.



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In addition to a larger number of operations and facilities, the MOX option also entails an extra transportation step. Under the DOE's preferred alternative, both MOX fuel fabrication and immobilization would occur at SRS. In the case of immobilization, the glass logs would be stored until shipment to a repository. However, for MOX the unirradiated fuel would have to be shipped to the reactor and then the spent fuel shipped to a repository after irradiation.	8
Cost	
According to the DOE's July 1998 cost estimate report, the cost of MOX and immobilization disposition programs are approximately the same. However, this comparison fails to take into account a number of factors.	
First, the DOE assumes that a fuel off-set will be provided by the reactor companies. The idea behind the fuel off-set is that the MOX fuel would be placed in the reactor instead of the low enriched uranium fuel the reactor operators would normally need to purchase. Thus, the DOE assumes that the bidding consortia would subtract this fuel off-set from the charges for constructing and operating the MOX fuel fabrication facility. DOE estimates this fuel off-set to be approximately one billion dollars. While in principle this is possible, there is no guarantee that the reactor companies will agree to provide the fuel off-set. There is already indication that the bidding consortia of reactor operators and nuclear fuel manufacturers do not intend to undertake this task without reaping a profit.	9
In fact, one reactor official has stated very explicitly the desire of the nuclear power companies (and by extension the consortium partners which would handle MOX fuel fabrication) to make a profit. Jack Bailey, Vice-president of the Palo Verde nuclear plants stated his company's requirements for added compensation in March 1996:	
We also stressed in our letters to DOE that any initiative should address potential benefits to ratepayers and shareholders... The benefits must be substantial. If not, the entire proposition is a non-starter. What I mean specifically is that any agreement involving Palo Verde would require more than the incremental costs associated with using MOX fuel instead of uranium. That kind of payment would be insufficient. <sup>6</sup>	
Furthermore, the DEIS assumes that MOX fuel would be left in the reactor only long enough to meet the spent fuel standard, not for the maximum length of time a fuel rod would normally be in a reactor (p. 2-99). It is not clear what assumptions were made in the cost estimate as to the residence time of the fuel in the reactor. However, a shorter time in the reactor would mean less of the uranium fuel would be replaced over the timeframe of the disposition mission and would therefore reduce the fuel off-set.	10
Second, the cost estimate explicitly excludes a number of factors which could increase the cost of the MOX hybrid options.	11
<sup>6</sup> Jack Bailey, remarks made at the 3 <sup>rd</sup> International Policy Forum: "Deploying the reactor/MOX Option for Plutonium Disposition within the Current System of U.S. and Canadian Nuclear Reactors - Regulatory, Policy Impediments," Falls Church, VA., March 21, 1996.	
6	MD237

MD237-8 Transportation

Additional transportation would be required for the shipment of unirradiated fuel from the MOX facility to the reactor. Transportation of special nuclear materials, including fresh MOX fuel, would use DOE's SST/SGT system. Since the establishment of the DOE Transportation Safeguards Division in 1975, the SST/SGT system has transported DOE-owned cargo over more than 151 million km (94 million mi) with no accidents causing a fatality or release of radioactive material. The transportation requirements for the surplus plutonium disposition program are also evaluated in this SPD EIS.

MD237-9 MOX Approach

Use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors.

Because this comment relates directly to the cost analysis report, it has been forwarded to the cost analysis team for consideration. The *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, is available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

MD237-10 MOX Approach

As discussed in Chapter 2 of Volume I, MOX fuel would be left in the reactor for a full cycle. Under the current reactor options, there are no plans to leave it there only long enough to meet the Spent Fuel Standard.

MD237-11 Cost Report

Cost-related comments are addressed in response MD237-9.

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Costs that would remain the same, independent of where the facility is sited, are not included. Examples of costs that are not included in this report are research and development, environmental analyses, operation of the Defense Waste Processing Facility (DWPF), and nuclear reactor modifications and irradiation services. Total costs shown are, consequently, not full life-cycle costs.<sup>7</sup>

The only cost specific to the immobilization option is operation of DWPF. However, DWPF will operate whether or not plutonium disposition occurs. The costs specific to the MOX portion of the hybrid options are reactor modifications and irradiation services. As there has been no final decision taken about specific reactors to be used for the disposition program, it is not possible to determine how much it will cost to modify the reactors to handle MOX fuel (or if modifications will need to be made). As for irradiation services, it seems unlikely that irradiation service fees will not be part of any bid from the nuclear consortia. As stated above, there is every indication that these companies intend to make a profit from their involvement with this program.

Therefore, while DOE indicates that the MOX hybrid and immobilization options would be comparable in cost, it is painting a misleading picture by excluding significant costs of the MOX program. The one billion dollar fuel off-set may not be realized. This would raise the hybrid option costs by approximately 50%. Furthermore, the hybrid option costs can be expected to rise even higher due to reactor modifications and irradiation service fees.

Reactor Related Issues

The vast majority of LWRs were not designed to use plutonium as a fuel. While both plutonium-239 and uranium-235 are fissile materials that generate similar amounts of energy per unit weight, there are a number of differences between them as reactor fuels that affect reactor safety. The basic set of concerns relates to control of the reactor. The chain reaction in a reactor must be maintained with a great deal of precision. This control is achieved using control rods usually made of boron and (in pressurized water reactors) by adding boron to the water. Control rods allow for increases and decreases in the levels of reactor power and for orderly reactor shut-down. They prevent runaway nuclear reactions that would result in catastrophic accidents.

It should be noted that while all commercial LWRs have some amount of plutonium in them which is made during the course of reactor operation from uranium-238 in the fuel, the total amount of plutonium is about one percent or less when low enriched uranium fuel is used. When MOX fuel is used, the total amount of plutonium would at all times be considerably higher. It is this difference that creates most reactor control issues.

<sup>7</sup> DOE, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition*, (DOE/MD-0009 Rev. 0) July 22, 1998. p. 3-1

MD237-12

MOX Approach

DOE acknowledges the commentor's concern regarding the use of MOX fuel. Although no domestic, commercial reactors are licensed to use plutonium-based fuel, several are designed to use MOX fuel, and others can easily and safely accommodate a partial MOX core. The fabrication of MOX fuel and its use in commercial reactors have been accomplished in Western Europe. This experience would be used for disposition of the U.S. surplus plutonium. The environmental, safety, and health consequences of the MOX approach, as well as the production and disposal of any waste, are addressed in this SPD EIS (see revised Section 4.28 and other appropriate sections in Chapter 4 of Volume I). In addition, NRC would evaluate license applications and monitor the operations of both the MOX facility and the commercial reactors selected to use MOX fuel to ensure adequate margins of safety.

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Changing the fuel can affect the ability of the control rods to provide the needed amount of reactor control and modifications to the reactor may be required before the new fuel can be used.

Several differences between the use of MOX fuel and uranium fuel affect safety:

- The rate of fission of plutonium tends to increase with temperature. This can adversely affect reactor control and require compensating measures. This problem is greater with MOX made with weapons-grade plutonium than that made with reactor-grade plutonium.
- Reactor control depends on the small fraction of neutrons (called delayed neutrons) emitted seconds to minutes after fission of uranium or plutonium. Uranium-235 fission yields about 0.65 percent delayed neutrons, but plutonium yields only about 0.2 percent delayed neutrons. This means that provisions must be made for increased control if plutonium fuel is used, if present control levels and speeds are deemed inadequate.
- Neutrons in reactors using plutonium fuel have a higher average energy than those in reactors using uranium fuel. This increases radiation damage to reactor parts.
- Plutonium captures neutrons with a higher probability than uranium. As a result, a greater amount of neutron absorbers are required to control the reactor.
- The higher proportion of plutonium in the fuel would increase the release of plutonium and other transuranic elements to the environment in case of a severe accident.
- Irradiated MOX fuel is thermally hotter than uranium fuel because larger quantities of transuranic elements are produced during reactor operation when MOX fuel is used.

Overall, the issues related to reactor control, both during normal operation and emergencies, are the most crucial. Most independent authorities have suggested that only about one third of the fuel in an LWR can be MOX, unless the reactor is specifically designed to use MOX fuel. However, there are some operational problems associated with using partial-MOX cores since MOX fuel is interspersed with uranium fuel. Their differing characteristics regarding control, radiation and thermal energy mean that there are non-uniform conditions in the reactor that can render operation and control more complicated. Some reactor operators claim they can use 100 percent MOX cores without needing to make physical changes to the reactor or control rods. The safety implications of such claims need to be independently verified.

Russia only has eight reactors under consideration for loading of MOX fuel. There has been little publicly-available analysis about the safety of loading VVER-1000s with MOX fuel. Many of these reactors are old, and will be nearing the end of their 30-year license at the time MOX loading would begin. Current plans seem to envision potential operation of Russian reactors well beyond this 30-year period. Certainly, this

MD237-13

Nonproliferation

DOE acknowledges the commentor's concern regarding reactor safety and nuclear material safeguards in Russia. Close cooperation between the United States and Russia is essential in achieving the objective of nonproliferation and arms reduction, and to ensure secure management of nuclear weapons materials. To that end, in late July 1998, Vice President Gore and Russian Prime Minister Sergei Kiriyenko signed a 5-year agreement to provide the scientific and technical basis for decisions concerning how surplus plutonium will be managed. This agreement enables the two countries to explore mutually acceptable strategies for safeguarding and dispositioning surplus plutonium. Accordingly, the U.S. Congress appropriated funding for a series of small-scale tests and demonstrations of plutonium disposition technologies jointly conducted by the United States and Russia. During the first week of September 1998, Presidents Clinton and Yeltsin held a Moscow summit and signed a statement of principles with the intention of removing approximately 50 t (55 tons) of plutonium from each country's stockpile. Two of the seven principles that were agreed upon relate to financing arrangements and acceptable methods and technology for transparency measures, including appropriate international verification measures and stringent standards of physical protection, control, and accounting for the management of the plutonium.

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raises safety concerns to an even greater level. Similar problems surround plans to load the BN-600, located at Belayarsk, with MOX fuel. By Minatom's own reckoning, there have been at least 30 sodium leaks at the reactor since its start of operation in 1980.<sup>8</sup> Numerous other incidents have also been documented.<sup>9</sup> Given the current political weakness and underfunding of regulatory forces in Russia, notably Gosatomnadzor, it is unlikely that they can guarantee proper regulation of Russian reactors. What would the US responsibility be in event of an accident at a reactor which occurred in the context of a program promoted by the US government over the wishes of the Russian nuclear establishment? If MOX fuel use in VVERs turns out to be unsafe and an accident occurs as a result, what would US liabilities be? What would be the responsibility of the US government to the Russian people who have already suffered so much from nuclear accidents in the past? Will the US be willing to assume responsibility for an accident due to this change in fuel? Would the US be willing to provide insurance against the increased risk of accidents due to the change in fuel? Furthermore, is the US prepared for the social upheaval that would accompany such an accident? The 1986 Chernobyl accident is widely acknowledged as a precipitating cause of the break-up of the Soviet Union (when combined with other factors). Given the social tensions caused by the current economic troubles, it is not hard to imagine that an accident would have a very serious impact on the stability of Russia, not to mention on the security of nuclear materials there.

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Russia

The Russian public has been an important moderating force on Minatom's plans for a plutonium economy, consistently opposing large new plutonium projects. In this, DOE's non-proliferation interests coincide with the Russian public's desire to protect their health and environment. Given this important conjunction of interests, DOE ought to be promoting the Russian public's voice in disposition decisions. Instead, it seems inclined to ignore Minatom's violation of access to information, environmental, and public participation laws.

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Finally, it is clear that Russia is unable to finance a disposition program without substantial outside help. As we have shown above, DOE's assertions that MOX and immobilization are approximately equal in cost are grossly misleading. MOX is by far the more expensive option, particularly when the potential costs of modifying reactors is added. The lack of money raises serious questions about the potential for large-scale Congressional appropriations, and the possibility of private investment. The latter is particularly troubling, however, because it implies potential commercial use of the MOX fuel fabrication facility and perhaps other plutonium facilities after the end of the disposition program.

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<sup>8</sup> Joint United States- Russian Plutonium Disposition Study, September 1996, p. Sum-17.  
<sup>9</sup> Leonid Piskunov, Yadernyi Ob'ekt za Okalitsel Uralskoi Stoliby, Ekaterinburg: 1997.

MD237-14

Nonproliferation

DOE will continue to maintain a close working relationship with Russia to develop technical solutions that take into consideration public health and the environment for surplus plutonium disposition.

MD237-15

Nonproliferation

Financing the Russian MOX fuel program, costs of the MOX fuel option, and reuse of the MOX facility are addressed in responses MD237-4, MD237-9, and MD237-13.

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**DEIS deficiencies**

The DEIS contains a number of deficiencies which need to be addressed. These include:

**Representative/Generic Analysis**

The DEIS does not include an analysis of impacts for specific reactors to be used for the MOX option. Instead, it appears to rely on a generic analysis conducted as part of the *Storage and Disposition PEIS* (e.g. summary of accident effects on pp. 2-101 and 2-102). Specific reactor analysis will supposedly be included in the Final EIS based upon the response to DOE's *Request for Proposals for MOX Fuel Fabrication and reactor Irradiation Services*. However, there are two problems with this approach. First, the use of the "216" process, in which DOE provides summary information on environmental impacts in order to protect proprietary information, does not allow the public and outside experts to adequately judge the information presented. Second, there will be no opportunity for comment by the public concerning reactor-specific issues during the NEPA process. This will exclude the populations surrounding the reactors from publicly participating in the decision-making process at this stage.

The DEIS uses a representative site analysis for the source of depleted uranium hexafluoride and for the conversion of the depleted uranium hexafluoride to uranium dioxide. The Portsmouth Gaseous Diffusion Plant is used as the representative site for the source of uranium hexafluoride because it is the only one of the three storage sites with the equipment to transfer the material from its storage containers to the containers used in the conversion process. Of five possible sites for conversion to uranium dioxide, the DOE chose the General Electric Company's Nuclear Energy Production Facility in Wilmington, North Carolina as a representative site (p. 1-8).

While a rationale is given for choosing the Portsmouth facility, there is no reason given for choosing the GE site. In addition to the lack of a clear reason to choose this facility for a representative analysis of the environmental impacts of this process, there is no demonstration of why this particular facility is representative of all facilities. The burden of proof is upon the DOE to demonstrate not only that representative analysis is acceptable technically, but also that the site chosen is representative of the potential impacts. This should also not act as a replacement for a complete environmental impact assessment once a candidate site has been chosen.

In the final EIS the DOE must clearly show that representative analysis is valid and that the sites chosen are truly representative of the processes and impacts described. The DOE should also state what process will be used for assessing environmental impacts once a site is chosen. The lack of public involvement in this area needs to be addressed as soon as possible.

**Comparison of Results**

The DEIS does not allow the reader to make a comparison between the alternatives. Section 2.18 is titled "Summary of Impacts of Construction and Operation

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**MD237-16**

**General SPD EIS and NEPA Process**

The SPD Final EIS was not issued until the proposed reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999. This *Supplement* included a description of the affected environment around the three proposed reactor sites, and analyses of the potential environmental impacts of operating these reactors using MOX fuel (Sections 3.7 and 4.28 of this SPD EIS, respectively). During the 45-day period for public comment on the *Supplement*, DOE held a public hearing Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

**MD237-17**

**General SPD EIS and NEPA Process**

General Electric Company's Nuclear Energy Production Facility in Wilmington, North Carolina, was selected because its operations are typical of those of the candidate sites for the conversion of uranium hexafluoride to uranium dioxide. The analysis presented in Chapter 4 of Volume I indicates that no significant environmental impacts would result from the use of the Nuclear Energy Production Facility, and that there is no physical basis for an expectation of significant impacts at any other candidate facility or along transportation routes to and from facilities.

The methods used to obtain the results are described in Chapter 4 and the relevant appendixes. Regardless of the facility selected, DOE would comply with NEPA and all other applicable laws and regulations.

The comment process for the SPD EIS was open to all interested parties. No individual or organization was excluded from that process.

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of Surplus Plutonium Disposition Facilities." However, it fails in its task of clearly summarizing the impacts in a manner conducive to comparison. This section (as well as parts of Chapter 4) details the integrated impacts of the MOX option (including irradiation in a reactor and transport). It also provides a comparison of the different types of immobilization options (ceramic vs. glass and homogenous vs. can-in-canister). However, there is no summary of the integrated impacts of the full immobilization option, only a comparison of the impacts of the immobilization facilities. In fact, we could find no presentation of the integrated impacts of the immobilization option could be found in the document. It is not acceptable to expect the public to undertake this task.	18
Furthermore, the two sections present the impacts in different ways. The MOX integrated impacts section provide figures for doses, population doses, increased risk and Latent Cancer Fatalities due to routine operations. The section on immobilization only provides doses and population doses.	
This is a complicated program with a number of alternatives. It is the DOE's responsibility to present the information in a manner more conducive to comparison and this should be done in the final EIS.	
Waste Isolation Pilot Plant	
The DEIS assumes the Waste Isolation Pilot Plant will be open and able to handle the transuranic waste from these processes. However, as has been stated repeatedly by IEER in other contexts, WIPP is not the solution to the transuranic waste problem. Furthermore, WIPP is severely behind schedule, faces a number of challenges to its opening, and cannot handle the volume of waste. WIPP should not be assumed to be the final repository for transuranic waste generated during disposition. A safer assumption would be on-site retrievable storage (in RCRA compliant facilities for mixed waste if necessary).	19
Decision Making Process	
The DEIS fails to clearly specify the criteria that will be used in making the final decision on which disposition alternative will be followed. The environmental impact assessment of any project should not be simply an exercise to justify policy decisions. The results of the analysis must be included in the final decision-making process in a substantive manner.	
Page 2-11 of the DEIS states that three factors were involved in reducing the large number of possible options to the 23 that the DOE considers "reasonable." Taken in equal measure, these factors were: worker and public exposure to radiation, proliferation concerns due to transportation of materials, infrastructure cost. This raises a number of issues.	20
First, why were non-proliferation issues unrelated to transportation ignored in the initial phase of narrowing the options? As discussed above, there are a number of non-proliferation problems with the use of MOX fuel which are not related to transportation. The creation of a plutonium economy which includes reprocessing of spent fuel to extract	
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MD237	

MD237-18

General SPD EIS and NEPA Process

Chapter 4 of Volume I describes the environmental impacts of those alternatives (Alternatives 11 and 12) under which up to 50 t (55 tons) of surplus plutonium would be immobilized. Included are impacts incurred during the construction of new facilities and during facility operation. All categories of impacts are addressed, including those attributable to normal operation, accidents, and transportation.

For each alternative except No Action, the analysis in Chapter 4 shows radiological impacts on the population residing within 80 km (50 mi) of the facilities, the MEI, and the average exposed individual. The analysis of each alternative, including those that involve immobilization only, includes estimates of the population dose, the annual dose to the maximally exposed and average exposed individual, and the LCF risk of a 10-year exposure.

Section 2.18 summarizes the environmental impact information provided in Chapter 4. For ease of comparison, identical summary information is provided for each alternative (see Table 2-4). This information includes impacts on air quality, waste management, employment, and land disturbance, as well as human health risks, the LCF risk from the most severe design basis accident, and transportation risks.

A focused comparison of the preferred alternative (Alternative 3) and the immobilization-only alternative (Alternative 12A) at SRS is provided in the table below.

MD237-19

Repositories

The management of TRU waste generated by the proposed surplus plutonium disposition facilities is evaluated in this SPD EIS. DOE alternatives for TRU waste management are evaluated in the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F, May 1997) and the *WIPP Disposal Phase Final Supplemental EIS* (DOE/EIS-0026-S-2, September 1997). WIPP began receiving shipments of TRU waste for permanent disposal on March 26, 1999. As described in Appendix F.8.1, and the Waste Management sections

Comparison of Alternative 3 with Alternative 12A at SRS

Summary of Impacts	Alternative	
	3	12A
Air quality		
(incremental pollutant concentrations in µg/m³) <sup>a</sup>		
Carbon monoxide	0.37	0.246
Nitrogen dioxide	0.0634	0.0529
PM <sub>10</sub>	0.00423	0.00364
Sulfur dioxide	0.124	0.0852
Waste management (m³) <sup>b</sup>		
TRU	1800	1500
LLW	2400	1700
Mixed LLW	50	20
Hazardous	940	910
Employment (direct) <sup>c</sup>		
Construction	1968	1196
Operations	1120	751
Land disturbance (ha) <sup>d</sup>		
Construction	32	20
Human health risk (dose in person-rem) <sup>e</sup>		
Construction (workforce)		
Dose	4.1	2.9
LCFs	1.6×10 <sup>-3</sup>	1.2×10 <sup>-3</sup>
Operations		
Dose		
Public	1.8	1.6
Workers	456	446
LCFs		
Public	9.0×10 <sup>-3</sup>	8.0×10 <sup>-3</sup>
Workers	1.8	1.8
Facility accidents <sup>f</sup>		
Tritium release at pit conversion facility	5.0×10 <sup>-2</sup>	5.0×10 <sup>-2</sup>
Transportation <sup>g</sup>		
LCFs	8.1×10 <sup>-2</sup>	0.152
Traffic fatalities	5.3×10 <sup>-2</sup>	8.1×10 <sup>-2</sup>
Kilometers traveled (millions)	4.3	4.4
Additional risk of LCFs at Pantex	8.3×10 <sup>-2</sup>	8.3×10 <sup>-2</sup>

<sup>a</sup> Values represent the incremental criteria pollutant concentrations associated with surplus plutonium disposition operations for the annual averaging period for nitrogen dioxide, particulate matter with an aerodynamic diameter smaller than or equal to 10 microns (PM<sub>10</sub>), and sulfur dioxide, and for the 8-hr averaging period for carbon monoxide.

<sup>b</sup> Values are based on a construction period of approximately 3 and 10 years of operation.

<sup>c</sup> Values are for the peak year of construction for each site and for the annual operation of all facilities for each alternative.

<sup>d</sup> Values represent the total land disturbance at each site from construction and operations.

<sup>e</sup> Values for Alternative 1 represent impacts over 50 years of operation under No Action. Those for the remaining alternatives are for the period of construction and 10 years of operation. Public dose values represent the annual radiological dose (in person-rem) to the population within 80 km (50 mi) of the facility for the year 2030 under Alternative 1, or for 2010 under Alternatives 2 through 12. Worker dose values represent the total radiological dose to involved workers at the facility (in person-rem/year). Public LCFs represent the 50-year LCFs estimated to occur in the population within 80 km (50 mi) for the year 2030 under Alternative 1, or the 10-year LCFs estimated to occur for the year 2010 under Alternatives 2 through 12. Worker LCFs represent the associated 50- or 10-year LCFs estimated to occur in the involved workforce.

<sup>f</sup> The most severe design basis accidents (based on 95 percent meteorological conditions) is used to obtain the population LCF.

<sup>g</sup> For alternatives that involve more than one site, the transportation impacts for the entire alternative are shown in the first site listed in the alternative. LCFs are from the radiological exposure associated with incident-free operation, radiological accidents, and fatalities expected as a result of vehicle emissions. Traffic fatalities are from nonradiological vehicle accidents. LCFs at Pantex are associated with repackaging requirements if the pit conversion facility is located elsewhere.

Key: LCF, latent cancer fatality; LLW, low-level waste; TRU, transuranic.

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plutonium will be harder to counter internationally if the United States is using MOX fuel. The desire of the Russian government in particular to eventually extract the plutonium from the spent fuel raises serious non-proliferation concerns.

Second, the choice of a dual-track strategy as the preferred alternative indicates that these criteria were not considered the most important. As discussed above, immobilization provides advantages from an environmental and human health perspective as well as cost savings and the capability of a faster completion of the mission. This does not even take into account the much greater proliferation and policy consequences of a MOX program which should have been included as a criteria.

Third, if these criteria were suitable for an initial screening of options, are they used as the basis for a final decision? What further factors will be used in the final decision?

The final EIS should answer these questions and lay out the criteria for a decision in this program.

Single Facility Analysis

The DEIS fails to analyze an alternative which is "reasonable." It is technically feasible to convert and immobilize all 50 tons of plutonium in a single facility, including pit disassembly and conversion. The pit disassembly and conversion facility transforms the plutonium into an oxide form which is necessary for the ceramification process. However, it also includes processes only necessary for the MOX option, the main one being gallium removal. Under the current planning the facility would be constructed and operated with gallium removal even if the decision is made to immobilize all the plutonium.

However, the immobilization facility also includes the capability to convert plutonium to an oxide form (which is necessary for the 17 tons of non-pit material which is slated for immobilization). It would be possible to expand this capability in the immobilization facility and dispense with the separate Pit Disassembly and Conversion Facility entirely. We do not know what effect this would have on the environmental impacts. However, such a facility would not include the gallium removal process or the plutonium polishing process which is being kept as an option if certain impurities cannot be removed. It would therefore require less overall processing and handling than the current plans.

The DOE has stated that a single immobilization facility should be technically feasible but that the obstacle would be keeping the facility open to IAEA inspection.<sup>6</sup> Under current plans the immobilization facility will be open to inspection by the IAEA. At issue is the fact that the plutonium pits are classified until they are converted into an oxide. However, this argument is disingenuous. It would not be difficult to design the facility in such a way that IAEA inspectors would not have access to the processing

<sup>6</sup> Notes of William Zeriffi taken at the Aug. 20 Idaho Falls hearing on the Surplus Plutonium Disposition Draft Environmental Statement.

in Chapter 4 of Volume I, it is conservatively assumed that TRU waste would be stored at the candidate sites until 2016, at which time it would be shipped to WIPP in accordance with DOE's plans. Expected TRU waste generated by the proposed facilities is included in the *WIPP Disposal Phase Final Supplemental EIS* cumulative impacts estimates, as well as in the *National TRU Waste Management Plan* (DOE/NTP-96-1204, December 1997).

MD237-20

Alternatives

The decision to pursue a hybrid approach to surplus plutonium disposition is reflected in the *Storage and Disposition PEIS* ROD. The three screening criteria described in Section 2.3.1 were used to establish the siting alternatives for the hybrid and immobilization-only approaches, not the alternative technologies. After their application in selecting the reasonable range of alternatives, these criteria were no longer useful as discriminators for the selection of preferred alternatives.

DOE does not agree with the commentor's assertion that the MOX fuel approach does not provide the degree of proliferation resistance that immobilization does. As explained in the *Storage and Disposition PEIS*, DOE's Office of Arms Control and Nonproliferation, with MD support, prepared a report, *Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives* (DOE/NN-0007, January 1997), to assist in development of the ROD. This report, which concerns the nonproliferation and arms reduction implications of alternatives for the storage of plutonium and HEU and the disposition of excess plutonium, makes it clear that in regard to nonproliferation issues unrelated to transportation, none of the disposition technologies evaluated is clearly superior to another.

Russia's plans for MOX fuel are addressed in response MD237-1.

MD237-21

Alternatives

It would be technically possible to perform pit disassembly and conversion in the same facility as plutonium conversion and immobilization. However, given the different composition of pit and nonpit plutonium, and the different security issues, it is not clear that there would be any cost or other advantage



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sections which contain classified pits, but would have access to the rest of the facility. Indeed, DOE is already designing such a facility. The Pit Disassembly and Conversion Facility layout presented in the DEIS clearly shows a Classified section where pits are received and a non-classified section after they have been processed. There are even IAEA offices clearly labeled in the non-classified section. There is no reason this could not be done in a single pit disassembly, conversion, and immobilization facility. In fact, on p. 2-20 the DEIS discusses the possibility of collocating the pit disassembly and immobilization functions in an existing facility. If this can be done in an existing facility, it surely can be done in a new facility which is specifically designed to allow for both classified and unclassified sections.

The failure of this DEIS to analyze a reasonable alternative which would appear to meet their screening criteria is a fundamental flaw. The needs to be addressed before an informed decision can be made as to the relative costs and benefits of the various alternatives.

**Worker Risks in Accidents**

The DEIS explicitly excludes analyzing the radiological effects of accidents on involved workers (those workers actually involved in a process when an accident occurs). The analysis is limited to non-involved workers 1000 meters away, the maximally exposed individual and the general public within 80 kilometers. The rationale for excluding workers actually involved in an accident is provided in K.1.4.1 which states:

Consequences to workers directly involved in the processes under consideration are addressed generically, without attempt at an scenario-specific quantification of consequences. This approach to in-facility consequences was selected for two reasons. First, the uncertainties involved in quantifying accident consequences because overwhelming for most radiological accidents due to the high sensitivity of dose values to assumptions about the details of the release and the location and behavior of the impacted worker. Also, the dominant accident risks to the worker of facility operations are from standard industrial accidents as opposed to bounding radiological accidents. (p. K-7)

This rationale is not sufficient to exclude those workers likely to bear the brunt of an accident during processing of plutonium. While it may be true that the models employed have problems below 1000 meters, this does not excuse this omission. Models have been developed for use in such circumstances. Alternatively, an attempt to modify the model could have been made or the uncertainty in the model results expanded to reflect the greater uncertainty in modeling workers close to the accident. Assumptions could be made about worker patterns (similar to the way assumptions are made concerning the general population).

The problem is exacerbated greatly by the presentation of the data on the noninvolved worker. The table which summarizes accident impacts for each alternative does not provide an estimate for the number of Latent Cancer Fatalities for non-involved workers despite providing this information for the general public. It should not be difficult for this estimate to be made as DOE presents numbers on how many badged workers are on-site. This omission is repeated in the summary of impacts presented on

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in doing so, even if all 50 t (55 tons) of the surplus plutonium were to be dispositioned through immobilization. Pit and nonpit plutonium would have to be converted to an oxide in separate, totally segregated processes. The pits would be classified, and access to the plutonium and process byproducts would have to be strictly limited. Moreover, the plutonium from the pits would be much purer; most of the nonpit plutonium would be contaminated with a variety of other materials, and the conversion processes would have to be tailored to address that. Services such as access control, shipping, and receiving (including truck bays) could conceivably be shared to some extent. However, because of the classification of almost all pit conversion activities, pit conversion and immobilization processes and spaces would have to be maintained and serviced largely independently of one another. The overall impacts, therefore, would not likely be substantially different from those of two separate but collocated facilities, a condition bounded by the analyses reflected in this SPD EIS.

**MD237-22**

**Facility Accidents**

There are a number of factors behind the decision to report worker consequences in the manner presented in this SPD EIS. First, as the commentor has stated, is the inability to calculate radiological doses to the involved worker in a meaningful way given the enormous dependency of calculated dose results on the values of highly uncertain parameters, such as those associated with the particular release mechanisms (e.g., the precise puff distribution of powder for a spill, explosion, or other accident, which depends on drop height, explosion phenomenology, the spatial and temporal failure profile of the can, glove, glovebox), and the assumptions defining the involved worker (e.g., inhaling versus exhaling, location, response to accident). The second factor is that for most accidents with a significant radiological consequence to the involved worker, this consequence is overwhelmed by nonradiological phenomena. This is because it takes a physical insult of some kind to breach radiological confinement. Such phenomena as fires, explosions, and building collapse that result in radiological release (among other things) present more significant nonradiological consequences to the involved worker. As a result, each alternative in Chapter 4 of Volume I includes an estimate of the expected

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pages 2-69 to 2-104. Accident impacts are quantified and discussed for the general population and a one paragraph description of consequences for involved workers is included. However, There is no discussion of impacts to noninvolved workers due to accidents. Table 2.4 which is supposed to be a summary of impacts by Alternative and Site only lists the accident Latent Cancer Fatalities for the general public.

The exclusion of involved workers in the accident analysis and the lack of complete results on the effects of accidents on non-involved workers raises serious questions as to DOE's commitments to worker safety and health. It is a reasonable assumption that the effect of an accident on workers would be greater than on the general public. The probability of Cancer Fatality is often ten times higher for the non-involved worker compared to the general public. The probability for the involved worker can be expected to be even higher. By only presenting full results for the public the consequences of accidents appear to be lower than what can reasonably be expected.

The final environmental impact statement should include a full and complete analysis of worker risks.

Plutonium Polishing

Appendix N of the DEIS describes "a polishing process by which impurities, particularly gallium, could be removed from the plutonium feed for mixed oxide (MOX) fuel fabrication." (p. N-1) It is included as an appendix because DOE considers it a contingency in case the dry processes DOE is developing for gallium removal fail to achieve the necessary purification level for MOX fuel fabrication. The plutonium polishing process would be an aqueous (wet) process. In previous analyses, DOE had rejected an aqueous process because of its higher environmental costs. Aqueous processes generate greater waste volumes and the waste is in a liquid form which is more difficult to handle.

It is difficult to determine, from the information given in the DEIS, exactly what the incremental effects of using plutonium polishing would be in all cases. This is because waste generation figures within each alternative are given for all three facilities. The added waste information presented in Appendix N is very confusing, and makes it very difficult to assess the environmental impact of the addition of plutonium polishing on the PDCF. This comparison would be the most suitable in judging the impacts of plutonium polishing.

Appendix N provides the potential impacts of plutonium polishing at the four sites (Tables N-10 to N-13). For the Hanford and SRS sites the DEIS uses alternatives 2 and 3 which would locate all three facilities at the site in question. Plutonium polishing at these sites would approximately 12% more transuranic waste. However, for INEEL and Pantex which would only have two facilities the incremental production of transuranic waste would be approximately 30%. The same holds true generally for low-level waste, mixed low-level waste, hazardous waste, and non-hazardous waste. In fact, for LLW the increases at Hanford and SRS are 27% and 16% respectively, while the increases at INEEL and Pantex are 33% and 64% respectively. This disparity in the cases being

22

7

cases of nonradiological injuries or illnesses and fatalities. These are the dominant risks to involved workers. The reason that risks to the public can be stated in terms of radiological releases is that other facility-related dangers are of only localized concern and do not travel the distance required to represent a public hazard (one notable exception being seismic events, which could cause significant damage to local buildings). With respect to the noninvolved worker, the calculation of population doses, from which cancer statistics can be calculated, is somewhat intractable. The largest individual doses would likely occur immediately outside the facility, particularly for ground-level releases. Doses from stack releases are more stable, but are also highly uncertain at small distances. Therefore, the potentially largest contribution to doses to noninvolved workers are in a regime that is uncertain, for calculations are of questionable value. This problem does not exist for the public, where each member is at a distance where estimates are meaningful. It would be possible, for example, to define the noninvolved worker as a worker beyond some distance like 200 m (656 ft), but the population dose calculated for that population would exclude a potentially large fraction of the total worker dose. Consequently, it was decided to provide the metric of individual dose (and probability of LCF) to the maximally exposed member of the public 1,000 m (3,281 ft) away or at the site boundary if less than 1,000 m (3,281 ft) distant. This was the protocol used in the *Storage and Disposition PEIS*, and it was considered proper for use in this SPD EIS as well; it also provides a valid basis for understanding environmental impacts of and comparing alternatives considered in this EIS.

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compared is very confusing and underplays the impact of plutonium polishing on waste generation. The incremental impacts on the single facility which would actually house the plutonium polishing module would be even greater.

Furthermore, the DOE has not stated how it would make a decision to use plutonium polishing and what role the potential future use of plutonium polishing will have on its more immediate decisions. If DOE decides to proceed with the hybrid approach and it is discovered in the future that plutonium polishing is necessary, resource commitments already made at that point will likely render it difficult to switch to an immobilization only alternative.

Unanswered Questions

While the DEIS does provide a substantial amount of information on both the MOX and immobilization options there are serious gaps.

- What are the DOE's plans to account for the failure of the In-Tank Precipitation (ITP) process at the Savannah River Site? DOE has ruled out the only alternative that it was previously considering, the use of cesium-137 from Hanford. (p. S-15) How will ITP failure affect the immobilization program's technical options and timescale? 7
- What assumptions were made about the number and siting of reactors in assessing the cumulative impacts of the MOX option (Section 2.18.3)? Reference is made in this section to 4.3.5.2 of the *Storage and Disposition PEIS* for a generic analysis of light water reactors using 100% MOX cores. That analysis is for a single reactor at a site and clearly states that for multiple reactors at a site the impacts "would be approximately doubled for two reactors or tripled for three reactors." On p. S-11 of the *Surplus Plutonium Disposition DEIS* it states that irradiation would occur at 3-8 reactors but does not state any assumptions about the number of sites or how many were assumed for the analysis. 23
- Why is the DOE reserving the option to use CANDU reactors and moving forward with testing if throughout the DEIS the assumption is that MOX will be used in US FWRs? If the DOE is still considering CANDU reactors, what effect will Ontario Hydro's recent shutdown of a number of CANDU reactors have on the program? What provisions will be made to ensure that both Canadian and U.S. citizens will have the opportunity for input? 24
- Who is responsible for unirradiated fuel? What will occur if MOX fuel fabrication commences but either the license to use MOX is rejected by the NRC or the reactor operators decide to cancel the project? 25
- How long will unirradiated fuel be stored and at what sites? If storage is at the reactor site, what additional security measures will be undertaken? 26
- What are the implications of siting facilities in the F-Canyon? How will this affect reprocessing policy? How will it affect clean-up of the site? Is there any relation between a decision to use the F-Canyon for the disposition program and the use of the 27

MD237-23

Immobilization

DOE's offices are coordinating efforts so that potential impacts of the SRS HLW program's decisions on immobilization are understood. This would allow any necessary changes to the can-in-canister or other immobilization approach to be made in a timely manner. DOE is presently considering a replacement process for the in-tank precipitation (ITP) process at SRS. The ITP process was intended to separate soluble high-activity radionuclides (i.e., cesium, strontium, uranium, and plutonium) from liquid HLW before vitrifying the high-activity fraction of the waste in DWPF. The ITP process as presently configured cannot achieve production goals and safety requirements for processing HLW. Three alternative processes are being evaluated by DOE: ion exchange, small tank precipitation, and direct grout. DOE's preferred immobilization technology (can-in-canister) and immobilization site (SRS) are dependent upon DWPF providing vitrified HLW with sufficient radioactivity. DOE is confident that the technical solution will be available at SRS by using radioactive cesium from the ion exchange or small tank precipitation process. A supplemental EIS (DOE/EIS-0082-S2) on the operation of DWPF and associated ITP alternatives is being prepared.

In addition, results of an in-progress NAS study will help determine to what extent the can-in-canister configuration meeting the Spent Fuel Standard depends on the presence of an intense radiation barrier. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. Necessary analyses would be conducted at that time should this decision identify the need to reconsider using cesium 137 from the capsules currently stored at Hanford. It should be noted that DOE has not made final decisions on disposition of the Hanford cesium and strontium capsules.

MD237-24

Cumulative Impacts

Section 4.28 was revised to discuss the potential environmental impacts of operating Catawba, McGuire, and North Anna, the reactors that would use

the MOX fuel. The analyses reflect the information provided by the bidders in the MOX procurement process, supplemented by additional information. Section 2.18.3 was revised and Section 4.32.8 was added to include the cumulative impacts of the proposed reactor sites.

**MD237-25** **Parallex EA**

In the SPD Draft EIS, DOE retained the option to use some of the surplus plutonium as MOX fuel in CANDU reactors, which would have only been undertaken in the event that a multilateral agreement were negotiated among Russia, Canada, and the United States. Since the SPD Draft EIS was issued, DOE determined that adequate reactor capacity is available in the United States to disposition the portion of the U.S. surplus plutonium that is suitable for MOX fuel and, therefore, while still reserving the CANDU option, DOE is no longer actively pursuing it. However, DOE, in cooperation with Canada and Russia, proposes to participate in a test and demonstration program using U.S. and Russian MOX fuel in a Canadian test reactor. A separate environmental review, the *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999), analyzes the fabrication and proposed shipment of MOX fuel rods for research and development activities involving the use of limited amounts of U.S. MOX fuel in a Canadian test reactor. A FONSI was signed on August 13, 1999. Both of these documents can be viewed on the MD Web site at <http://www.doe-md.com>. If a decision is made to dispose of Russian surplus plutonium in Canadian CANDU reactors in order to augment Russia's disposition capability, shipments of the Russian MOX fuel would take place directly between Russia and Canada.

**MD237-26** **DOE Policy**

DOE conducted a procurement process to acquire MOX fuel fabrication and irradiation services. The selected team, DCS, would design, request a license, construct, operate, and deactivate the MOX facility as well as irradiate the MOX fuel in domestic, commercial reactors. However, these activities are subject to the completion of the NEPA process. Because the fuel fabricator and reactor licensees work closely as a team, it is unlikely that the fabrication of MOX fuel would outpace its need. Reactor shutdowns or other operational

issues that could affect the need for fuel would be incorporated into the fuel fabrication schedules, and adjustments made as required. In the event that MOX fuel were made and then not be needed due to NRC not issuing a license amendment or other factors, DOE would be responsible for the unirradiated fuel and would reexamine its disposition options.

**MD237-27** **MOXRFP**

The MOX facility would have the capability to store the MOX fuel for a minimum of 18 months prior to shipment to the reactor sites for irradiation. The MOX facility would be located at an existing secure DOE site. DOE does not anticipate the need for any additional security measures at reactor sites, other than for the additional security applied for the receipt of fresh fuel. MOX fuel would be delivered to the commercial reactors in SST/SGTs. Commercial reactors currently have armed security forces, primarily to protect against perimeter intrusion. There would be increased security for the receipt and storage of fresh MOX fuel, as compared with that for fresh LEU fuel, for additional vigilance inside the perimeter. However, the increased security surveillance would be a small increment to the plant's existing security plan. After irradiation, the MOX fuel would be removed from the reactor and managed with the rest of the spent fuel from the reactor, eventually being disposed of at a geologic repository built in accordance with the NWPA. The duration for storage does not depend on whether the spent fuel originated as MOX or LEU, but rather on when a storage facility is available to receive spent fuel. The storage of MOX spent fuel would not require any additional security due to the radiation barrier and difficulty associated with moving spent fuel.

**MD237-28** **DOE Policy**

The use of U.S. surplus plutonium in existing domestic, commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). DOE eliminated as unreasonable the eight alternatives in the SPD Draft EIS that used portions of Building 221-F with a new annex at SRS for plutonium conversion and immobilization. It was determined

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F-Canyon to deal with scrubs and alloys from Rocky Flats by reprocessing them at SRS?	28
• What are the implications of re-use of the facilities? The DEIS states:  when the missions of the plutonium disposition facilities are completed, deactivation and stabilization would be performed to reduce the risk of radiological exposure; reduce the need for, and costs associated with, long-term maintenance; and prepare the buildings for potential future use. (Chapter 4 of the SPD EIS provides a discussion on deactivation and stabilization.) At the end of the useful life of the facilities, DOE would evaluate options for D&D or reuse of the facilities. D&D of these facilities would not occur for many years. When DOE is ready to propose D&D of these facilities, an appropriate NEPA review will be conducted. (p. S-5)	29
Section 4.31 states that "it is assumed that the equipment within the building would be deactivated and the facilities stabilized to a condition suitable for reuse." (p. 4-391, emphasis added) Such a process would include removing both nuclear materials and the equipment. However, DOE does not indicate how it would ensure, either through legal or regulatory means, that the facilities would not be reused for MOX fuel production purposes. The ROD for the <i>Storage and Disposition of Weapons-Usable Fissile Materials Final FEIS</i> indicates that DOE would try to limit facility licenses in order to prevent use of the MOX PFF for commercial MOX production (as well as limiting reactor licenses). This is not discussed in the <i>Surplus Plutonium Disposition DEIS</i> .	30
• What are the effects of an accident involving a cask near water? In chapter L, the DEIS describes various tests done on casks (e.g. drop tests). However, the immersion test is done a separate cask, one which has not gone through the series of physical stress tests. How would the accident analysis change if such a test were performed? Are there plausible scenarios for a cask falling from a height and being immersed in water (e.g. accidents on bridges over rivers)?  DOE's final environmental impact statement should answer these questions.	31
<b>Conclusions</b>  The "dual-track" strategy and its emphasis on MOX rests on a number of faulty political and technical assumptions. Two of the most important are, first, the idea that the US must implement a MOX program to ensure Russian participation in a disposition program. As we have shown above, this is false for a number of reasons. Second, is the idea that the dual-track provides technical backup in the case of problems with one of the options. This idea is faulty because immobilization is necessary to process 17 of the 50 metric tons of surplus plutonium, and so must be made to operate successfully in any case.  A MOX disposition program poses a number of long-term proliferation risks not adequately considered by DOE. Most significantly, such a program will finance a MOX fuel fabrication facility in Russia, providing the only missing link in Minalom's plans for	32
MD237	

that the amount of space required for the immobilization facility would be significantly larger than originally planned. These new space requirements mean that the annex required to be built alongside Building 221-F would be very close in size and environmental impacts to the new immobilization facility alternatives at SRS. Therefore, this SPD EIS only presents the alternatives involving a completely new immobilization facility at SRS. Building 221-F remains the preferred alternative for processing the RFETS plutonium residues and scrub alloy, as described in the *Final Environmental Impact Statement on Management of Certain Plutonium Residues and Scrub Alloy Stored at the Rocky Flats Environmental Technology Site* (DOE/EIS-0277F, August 1998). The cleanup of site facilities after completion of the surplus plutonium disposition program would be conducted in compliance with applicable environmental and safety regulations.

**MD237-29** **DOE Policy**  
DOE does not plan to use the proposed surplus plutonium disposition facilities for MOX fuel fabrication after completion of the surplus plutonium disposition program. D&D actions would be commensurate with facility reuse decisions.

**MD237-30** **Transportation**  
The Type B shipping containers that would be used for the transportation of surplus plutonium in various forms are described in Appendix L.3.1.6. The requirements for certification of a Type B container include maintaining its integrity at a depth of 15 m (50 ft). This would be a greater depth than would be involved in an accident on most bridges. A more rigorous requirement to withstand a depth of 200 m (656 ft) is required for casks that are certified to carry 1 million or more curies. These requirements are applied to an undamaged container because of the very low probability of a container breach by any realistic cause and on the basis of actual transportation experience. As indicated in Section 2.18, no traffic fatalities from nonradiological accidents or LCFs from radiological exposures or vehicle emissions are expected.

MD237-31

DOE Policy

The Russian government has plans to use surplus plutonium in commercial reactors. Because the Russians have expressed concern that immobilization would not destroy any plutonium, it is conceivable that the Russians would not eliminate their plutonium stockpile if the United States were to implement an immobilization-only approach. Therefore, the hybrid approach provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.

Immobilization is the preferred approach to disposition the 17 t (19 tons) of impure plutonium. All of the surplus plutonium could be made into MOX fuel, however, DOE reviewed the chemical and isotopic composition of the surplus plutonium and determined in the *Storage and Disposition PEIS* ROD that about 8 t (9 tons) of surplus plutonium were not suitable for use in making MOX fuel. Furthermore, DOE has identified an additional 9 t (10 tons) for a total of 17 t (19 tons) that have such a variety of chemical and isotopic compositions that it is more reasonable to immobilize these materials and avert the processing complexity that would be added if these materials were assigned to be made into MOX fuel. The criteria used in this identification included the level of impurities, processing requirements, and the ability to meet the MOX fuel specifications. If at any time it were determined that any of the 33 t (36 tons) currently proposed for MOX fuel fabrication was unsuitable, that portion would be sent to the immobilization facility.

MD237-32

Nonproliferation

DOE acknowledges the commentor's concerns regarding the disposition of surplus Russian plutonium as MOX fuel, although programmatic and policy issues such as U.S. policies toward plutonium disposition in Russia are beyond the scope of this SPD EIS. The United States will not support any plans to build a plutonium economy.

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a plutonium economy. It also poses severe safety and environmental dangers, particularly in its reliance on again Russian reactors.	32
Furthermore, immobilization provides a number of other advantages over MOX. Reactor control issues would not be present under an immobilization program. The number of facilities and operations would be reduced and the overall cost of the program would be lower.	33
The DEIS is insufficient as an environmental analysis document. The DOE has failed to include the communities living near the reactors their opportunity to participate in the process. It is insufficient to assume the NRC re-licensing process will accommodate their concerns. Furthermore, many reactor-related issues have been left out of this document.	16
Similarly, the DOE has failed to demonstrate that the sites chosen for conversion of uranium hexafluoride to uranium dioxide are representative of the actual sites which may be used. DOE has also failed to involve the affected citizens near these sites in the NEPA process.	17
The DEIS also has a number of deficiencies which need to be addressed. The DOE has failed to analyze a reasonable alternative which would involve a single facility undertaking the pit disassembly and conversion, as well as the immobilization process. The facility accident analysis does not adequately address the issue of worker risk and the effects of accidents on involved workers. The results for non-involved workers are not fully presented. There are numerous other deficiencies and unanswered questions which need to be resolved.	21
Unless DOE studies the proper options and provides complete analysis the final environmental impact statement will be fundamentally flawed and incomplete.	22
<b>Recommendations</b>	
The Institute for Energy and Environmental Research strongly urges the Department of Energy to:	
1. Select immobilization of all 50 metric tons of plutonium. Immobilization is the best alternative for meeting the non-proliferation and disarmament goals of the program while minimizing the impacts. The MOX option should be rejected for both technical and policy reasons, because it could create many safety and proliferation problems, even while addressing the security of surplus weapons plutonium. Certainly, it is in the interest of the US to encourage plutonium disposition in Russia, and to support such a program financially. However, DOE has not adequately explored other options for reconciling Russian policy on plutonium as an economic asset with the need to put surplus plutonium in non-weapons-usable form.	34
2. The DOE should analyze the option of conversion and immobilization of all 50 tons of surplus plutonium utilizing a single facility	21
3. The DOE should revise its accident analysis to include involved workers.	22
17	MD237

Close cooperation between the two countries is required to ensure that nuclear arms reductions cannot be easily reversed. Understanding the economic dilemma in Russia, the U.S. Congress has appropriated funding for a series of small-scale tests and demonstrations of plutonium disposition technologies jointly conducted by the United States and Russia. In fiscal year 1999 (starting October 1998), Congress further appropriated funding to assist Russia in design and construction of a plutonium conversion facility and a MOX fuel fabrication facility. This funding would not be expended until the presidents of both countries signed a new agreement. Although the amount appropriated by Congress is not sufficient to fund the entire Russian surplus plutonium disposition program, the United States is working with Russia and other nations to resolve this issue.

U.S. nonproliferation policy is addressed in response MD237-4.

MD237-33

Alternatives

It is correct that there would be no reactor issues involved if surplus plutonium disposition occurred through the immobilization-only approach, and the overall costs would probably be less because only two proposed surplus plutonium disposition facilities would be needed. However, the goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this.

MD237-34

Alternatives

Russia's plans for MOX fuel are addressed in response MD237-1.



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4. The DOE should provide integrated impacts for each alternative analyzed. A clear and concise summary of these impacts should be provided and comparisons made between the two major classes of alternatives: Hybrid and Immobilization.

35
5. The DOE should develop technical back-up options by developing alternate immobilization technologies, perhaps through pilot scale work to handle Rocky Flats materials.

36

**MD237-35** **General SPD EIS and NEPA Process**  
A comparison of the impacts of the hybrid and the all immobilization alternatives is addressed in response MD237-18.

**MD237-36** **DOE Policy**  
Several immobilization technologies for surplus plutonium disposition were analyzed in the *Storage and Disposition PEIS*. They include vitrification (glass), ceramic immobilization, and electrometallurgical treatment. Vitrification and electrometallurgical treatment are existing technologies. This SPD EIS analyzes the can-in-canister approach for both glass and ceramic immobilization. This technology is currently under testing for ceramic immobilization. Regarding the RFETS plutonium materials, existing technologies are being used to stabilize these materials so that they can be immobilized with the technology chosen in the SPD EIS ROD.



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**FATIMA M. GARCES-RODRIGUEZ**  
**Governor**

August 13, 1998

**Mr. Harold Canizer**  
**Acting Director**  
**Office of Fissile Materials Disposition**  
**United States Department of Energy**  
**P.O. Box 23786**  
**Washington DC 20026-3786**

State Application Identifier: MD980727-0797  
Project Description: Draft EIS - Surplus Plutonium Disposition

Dear Mr. Canter:

Thank you for providing the Maryland Department of the Environment (MDE) with the opportunity to comment on the above-referenced project. Copies of the documents were circulated throughout MDE for review, and it has been determined that this project is consistent with MDE's plans, programs and objectives.

Again, thank you for giving MDE the opportunity to review this project. If you have any questions or need additional information, please feel free to call me at (410) 631-3656.

**Sincerely,**

*Jane Mueller*  
for  
Steven Bieber  
MDE Clearinghouse Coordinator  
Technical and Regulatory Services Administration  
cc: Bob Rosenbush, State Clearinghouse

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MD026

## Other

MD026-1

DOE acknowledges the commentator's input.

**Massachusetts Citizens for Safe Energy**  
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July 21, 1998

JUL 27 1998

U.S. Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786 - Washington DC 20026-5134

RE: Request for DOE Meeting Concerning DEIS Regarding  
MOX in Boston/Plymouth MA Area

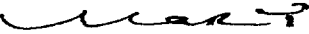
One operating nuclear reactor remains in Massachusetts - the Pilgrim Nuclear Power Station in Plymouth, Massachusetts. We have no confidence in the safety of that reactor because, for example: it is old and experiencing age-related deterioration peculiar to boiling water reactors; it is a GE Mark I - a flawed design and the manufacturer, GE, holds the prize for making reactors with the most troubled histories in the U.S.; the N.R.C., the regulators, have a consistent history of being the lapdogs, instead of the watchdogs, of the industry; and Massachusetts has recently deregulated it's electric market with consequent efforts by the owner of Pilgrim NPS to cut corners in an attempt to compete.

With that as background, it is understandable why we oppose the MOX proposal which would both raise the probability of a severe reactor accident and more than double the radioactivity that could be released should an accident occur.

We request that an additional DOE meeting on the Draft Environmental Impact statement be held in the Boston/Plymouth area to provide you with an opportunity for dialogue with individuals and groups who stand to be impacted by your proposal in the future.

The meetings scheduled to date are in Richland, Washington; Amarillo, Texas; North Augusta, SC; Portland, Oregon; Idaho Falls, ID. There are none scheduled in the Northeast where many of the aged reactors which potentially may use MOX fuel are located. We are left out of the process.

Respectfully submitted,

  
Mary Elizabeth Lampert

MD001

MD001-1

MOXRFP

Section 4.28 was revised to discuss the potential environmental impacts of operating Catawba, McGuire, and North Anna, the reactors that would use the MOX fuel, should the decision be made to proceed with the hybrid approach. In addition, the reactors selected include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program. Thus, the Pilgrim reactor was not considered because it is an older reactor.

MD001-2

General SPD EIS and NEPA Process

DOE does not believe that an additional public hearing in the Northeast is necessary, since none of the reactors to be used are located there. All interested parties were encouraged to comment on the *Supplement to the SPD Draft EIS* issued in April 1999. This *Supplement* included the Environmental Synopsis, a description of the affected environment around the three proposed reactor sites, and analyses of the potential environmental impacts of operating these reactors using MOX fuel (Appendix P and Sections 3.7 and 4.28 of this SPD EIS, respectively). During the 45-day period for public comment on the *Supplement*, DOE held a public hearing in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

CITY OF ALGONAC  
RESOLUTION

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM  
TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN  
AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying  
transportation options for moving weapons-usable fissile  
materials, including plutonium, for disposition. One of the  
three options under consideration is transporting the nuclear  
materials and fuel to Canada through Michigan utilizing the  
Blue Water Bridge at Port Huron; and

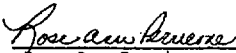
WHEREAS, there are many problems with transporting volatile  
and carcinogenic materials. The security and environmental  
risks are considerable and utilizing the Blue Water Bridge  
route would jeopardize the population of St. Clair County and  
the water supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the  
international water boundaries of Michigan. The western  
portions of the continent offer access that is much easier to  
secure and does not involve transportation through as many  
densely populated areas.

NOW, THEREFORE, BE IT RESOLVED, by the Algonac City Council,  
that we urge the United States Department of Energy to refrain  
from transporting weapons-usable fissile materials through  
Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be  
forwarded to the United States Department of Energy Office of  
Fissile Materials Disposition and each of our appropriate  
federal and state elected officials.

ADOPTED 8/4/98

  
Rose Ann Perricone  
City Clerk

MD017

MD017-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.



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RESOLUTION 98-3  
TRANSPORTATION OF NUCLEAR-GRADE MATERIALS

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, through Michigan, possibly utilizing I-69 and the Blue Water Bridge in Port Huron, and

WHEREAS, we are all aware of the many problems associated with transporting volatile and carcinogenic materials. The environmental risks are excessively high and the use of the Blue Water Bridge route would definitely jeopardize the population of Berlin Township as well as all of the other communities along this route and finally, of all places, one of the Great Lakes, and

WHEREAS, there are many other more suitable access points than the international water boundaries of Michigan. And as you must know, the western portions of the continent are more easily accessed and do not involve transportation through this densely populated area.

NOW, THEREFORE, BE IT RESOLVED: by the Berlin Township Board, St. Clair County, Michigan, that we sincerely urge the Department of Energy to exclude from consideration, the I-69 to Port Huron route, as a choice for transport of weapons-usable fissile material.

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

ADOPTED BY ROLL CALL VOTE ON AUGUST 10, 1998

BERLIN TOWNSHIP SUPERVISOR

BERLIN TOWNSHIP CLERK

BERLIN TOWNSHIP TREASURER

BERLIN TOWNSHIP TRUSTEE

BERLIN TOWNSHIP TRUSTEE

MD018

MD018-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

I would like to receive the Surplus Plutonium Disposition Draft Environmental Impact Statement. I did call about this about one month ago, and I have not received it yet. And the local people here would like to have a meeting. We feel that we need a public meeting here, as you would like to bring it through our Blue Water Bridge in Port Huron. You will be receiving information from our County Commissioners and our Port Huron City Councilmen. We all feel that is an important spot to have a meeting and we do not feel that we have had time to review the EIS, because we only have until September 16th and we believe that date should be pushed up. We have not been able to review it. We haven't been able to discuss it. And we would like to respond before September 16th as we feel it is our right. Thank you. Good bye.

1

PD025

PD025-1

Parallex EA

DOE acknowledges the commentor's concern regarding transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

BROCKWAY TOWNSHIP

A resolution to urge the United States Department of Energy to refrain from transporting weapons-usable fissile material through Michigan and St. Clair County in particular.

Whereas, The United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

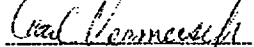
Whereas, There are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

Whereas, There are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas; now, therefore, be it

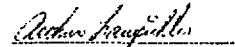
Resolved by the Brockway Township Board of Trustees, That we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and it further be

Resolved, That a copy of this resolution be transported to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

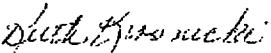
CARL VERMEESCH, SUPERVISOR



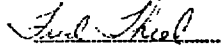
ARTHUR LAUPICILER, CLERK



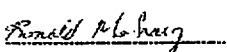
RUTH KROSNICKI, TREASURER



FRED THEEL, TRUSTEE



RONALD MEHARG, TRUSTEE



MD161

MD161-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

CHARTER TOWNSHIP OF CHINA  
St. Clair County, Michigan  
Resolution #8-98

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN  
FROM TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL  
THROUGH MICHIGAN AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable, and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

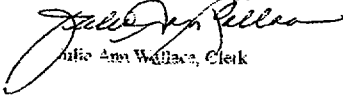
NOW, THEREFORE, BE IT RESOLVED, by the Charter Township of China Board of Trustees, that the United States Department of Energy be urged to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

IT IS FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

The following aye votes were recorded: Allen, Neiman, Wallace, Schwehofer,  
Markel, and Green;  
Absent: Lindsay

The following nay votes were recorded: None

CHARTER TOWNSHIP OF CHINA  
BOARD OF TRUSTEES

  
Julie Ann Wallace, Clerk

MD082

MD082-1

Parallex EA

The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.



STATE OF MICHIGAN)  
COUNTY OF ST. CLAIR)

I, Julie Ann Wallace, Clerk of the Charter Township of China, County of St. Clair,  
and State of Michigan, do hereby certify that the above Resolution #8-98 is a true and  
exact copy of the Resolution adopted at a regular meeting held August 17, 1998.

  
JULIE ANN WALLACE  
Township Clerk

DATE: August 17, 1998

MD082

Sept. 16<sup>th</sup> 1998

Office of Fuel Materials Management  
U.S. Dept. of Energy  
1000 Independence Ave. SW  
Washington D.C.

To the Dept. of Energy:

I am writing in behalf of Citizens For a Healthy Planet, a grassroots environmental group based in St. Clair County, Michigan. We are requesting a 60 day extension of the comment period and additional Public Hearings on the Draft Surface Plutonium Disposition Environmental Impact Statement.

One good reason for extending the comment period is that some of the persons in our area requesting the EXTENSION requested the documents immediately upon notification of their existence, yet the documents did not arrive until at least 8 weeks after the start of the comment period. I personally requested documents at the same time and received mine 3 weeks after the start of the comment period. This seems blatantly unfair as 3 weeks is not enough time to read these documents, and send for related experts used in these documents.

We are asking for additional hearings:

First, we propose a local hearing in the Port Huron, Michigan, Canada, Canada area, near the Paradox Project (the proposed shipping of US MOX fuel from Los Alamos, New Mexico for reprocessing at Chalk River Canada) was announced as an Environmental Assessment without notifying persons on the Plutonium Disposition mailing list, and providing no chance for local or national public review of the documents (especially stating out review and comments by telephone of the proposed route which are important areas.) We also ask that all persons on the Plutonium Disposition mailing list be notified immediately of the existence of the Environmental Assessment for the Paradox Project, and given a 60 day comment period and opportunity to ask for hearings. If then the Final Environmental Assessment for the Paradox Project is not completed before 1) and 2) are done. We also note that the St. Clair County Commission, the City of Port Huron, the Mayor of Detroit, Ontario in Canada, and Port Huron, Michigan, several municipalities in St. Clair County, many Michigan legislators including those Rep. Karen Michalski and Federal Rep. David Bonior, Senator Spencer Abraham, as well as many Great Lakes, Canadian and Michigan environmental groups including Great Lakes United, Nuclear Awareness Project, Citizens For Alternatives to Chemical Contamination, Michigan Environmental Council, et al. are asking for hearings in the Port Huron/Canada area. We would also ask that the Dept. of Energy refrain from selling releases by the Governor of states and Tribes along the river Public Review, especially as their comments are not available to the general public, in the same along the river as interested public as the Plutonium Disposition mailing list. What happened to the DOE's commitment to openness to the public?

We also suggest STAFF of America in their request for additional hearings. It says matter times that are being handled for use of DOE fuel. A hearing in Dallas, Texas as Dallas is likely to have a hearing for general nuclear development and radioactive waste from new reactors. It is in Dallas, Texas, in the proximity to Rocky Flats where approximately 1/3 of the nuclear plutonium is in storage. At the same time, hearings in Savannah, Georgia and Columbia, South Carolina. The DOE cannot easily exclude the record from hearings while holding one in Portland, no longer under serious consideration for the potential processing facilities. Impacts on the Savannah River from SRS operations and accidents are well documented and the Dept. of Energy owes these impacted citizens the right to speak out on any further plans. A hearing in Washington D.C. where many public policy and state officials, and many concerned citizens groups and non-governmental organizations want that would meet both the Dept. of Energy and the public's desire that would go to support the DOE's Plutonium Disposition program.

Finally, we feel that since all of these projects will impact people in every U.S. newspaper, we request that in addition to normal DOE public notification policy that the U.S. DOE break with tradition and send press releases also through the Associated Press or other national agency for distribution in newspapers nationwide in the Sunday editions every time it releases documents pertaining to the Plutonium Disposition.

FD321-1

Parallex EA

The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>. To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites and therefore, with the most directly concerned population. This decision did not preclude relevant comment by State and local governments, individuals, and organizations in Michigan. Approximately 1,700 copies of the SPD Draft EIS were mailed, and an NOA letter was mailed to an additional 5,500 members of the public. Several means were available for providing comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Equal consideration was given to all comments, regardless of how or where they were received. DOE does not believe that any extension of the comment period on the SPD Draft EIS is necessary. Moreover, DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

FD321-2

General SPD EIS and NEPA Process

DOE used various methods, including press releases to national and local news media—newspapers, radio stations, and television stations—to announce the availability of the SPD Draft EIS. It also mailed availability announcements to national, local, and tribal officials, as well as members of the public.

FD321

There is no doubt that the way we handle the surplus plutonium will have a significant impact on the health and safety of the people who work with it. The way we handle it will also have a significant impact on the health and safety of the people who live near it. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is stored. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is transported. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is disposed of. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is recycled. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is used. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is stored. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is transported. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is disposed of. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is recycled. The way we handle it will also have a significant impact on the health and safety of the people who live in the area where it is used.

Signed,  
Kathryn Cumbow,  
Citizens For a Healthy Planet,  
Box 334,  
Barnet, NJ 08005

FD321

Hello, this is Michael Keagan, and I'm calling on behalf of Citizens Resistance Infirmary II. We have formally taken a position that we are requesting an extension of the public comment period on the environmental assessment pertaining to the MOX Parallex project. We are in strong opposition to this being carried through and we are asking for our comments, an extension of time so that we can make comments on this MOX Parallex Project. My phone number is (31), I'm sorry, it is (734) 457-5979. Again that's Michael Keagan with Citizens Resistance Infirmary II. Thank you. I'm requesting a 90-day extension.

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PD064

PD064-1

Parallex EA

Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action, the Parallex Project; therefore, it is beyond the scope of the proposed action analyzed in this SPD EIS. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>. As indicated in Section 1.1, while the United States is participating in the Parallex Project, it is no longer actively pursuing the CANDU option as part of its plutonium disposition program. If Russia and Canada agree to disposition Russian surplus plutonium in CANDU reactors in order to augment Russia's disposition capability, shipments of the Russian MOX fuel would take place directly between Russia and Canada.



**TOWNSHIP OF CLAY**  
County of St. Clair

JON E. MANOS  
Supervisor  
MICHAEL P. PELLERITO  
Clerk  
CONNIE S. TURNER  
Treasurer

4710 PTE. TREMBLE ROAD • P.O. BOX 428      CLAY TOWNSHIP, MICHIGAN 48001-0429      TELEPHONE (810) 794-9303  
FAX (810) 794-1964  
BUILDING-ASSESSING  
(810) 794-9920

August 19, 1998

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

Enclosed is a Resolution adopted by the Clay Township Board of Trustees on August 3, 1998 urging the United States Department of Energy to refrain from transporting weapons-usable fissile material through St. Clair County.

Sincerely,

*Jon E. Manos*

Jon E. Manos  
Clay Township Supervisor

JEM/vk  
Enclosure

MD104

RESOLUTION

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM  
TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN  
AND ST. CLAIR COUNTY IN PARTICULAR

Minutes of a regular meeting of the Township Board of the Township of Clay,  
County of St. Clair, Michigan held in the Harsens Island Lions Hall, 263 LaCroix Road,  
Harsens Island, Michigan on the 3<sup>rd</sup> of August, 1998, at 7:30 p.m. Eastern Standard Time.

PRESENT: Supervisor Jon Manos, Clerk Michael Pellerito, Treasurer Connie  
Turner, Trustee Pat Sharrow, Trustee Dr. L. Kasperowicz, Trustee Joanne Shirkey,  
Trustee George Webster.  
ABSENT: None.

The following Preamble and Resolution were offered by Trustee George Webster  
and supported by Trustee Joanne Shirkey.

A resolution to urge the United States Department of Energy to refrain from  
transporting weapons-usable fissile material through Michigan and St. Clair County in  
particular.

WHEREAS, the Township of Clay supports the St. Clair County Board of  
Commissioners' Resolution No. 98-29, hereby, offers the following Resolution:

WHEREAS, there are many problems with transporting volatile and carcinogenic  
materials. The security and environmental risks are considerable and utilizing the Blue  
Water Bridge route would jeopardize the population of St. Clair County and the water  
supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the International  
water boundaries of Michigan. The western portions of the continent offer access that is  
much easier to secure and does not involve transportation through as many densely  
populated areas.

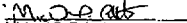
NOW, THEREFORE, BE IT RESOLVED, by the Clay Township Board of Trustees  
that we urge the United States Department of Energy to refrain from transporting  
weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the  
United States Department of Energy Office of Fissile Materials Disposition and each of our  
appropriate federal and state elected officials.

ROLL CALL VOTE WAS AS FOLLOWS:

AYES: Sharrow, Dr. Kasperowicz, Turner, Manos, Pellerito, Shirkey, Webster.  
NAYS: None.  
ABSENT: None.

This Resolution adopted by the Clay Township Board of Trustees August 3, 1998.

  
Michael P. Pellerito  
Clay Township Clerk

CERTIFICATION

I, hereby, certify that the foregoing constitutes a true and complete copy of a  
Resolution adopted by the Township Board of the Township of Clay, County of St. Clair,  
Michigan, at a regular meeting held on August 3, 1998, and that said meeting was  
conducted and public notice of said meeting was given pursuant to and in full compliance  
with the Open Meetings Act, being Act 267, were kept and will be or have been made  
available as required by said Act.

  
Michael P. Pellerito  
Clay Township Clerk

MD104

MD104-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material  
through Michigan. The transportation of weapons-usable fissile materials  
through Michigan and St. Clair County is beyond the scope of the proposed  
action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel  
from LANL to Canada were part of a separate proposed action. DOE has  
prepared an *Environmental Assessment for the Parallex Project Fuel  
Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed  
August 13, 1999, on fabrication of the MOX fuel and its transportation to  
Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be  
under renovation during the time of the proposed shipment, the route using  
that bridge was removed from consideration. This EA and FONSI can be  
viewed on the MD Web site at <http://www.doe-md.com>.

RESOLUTION 98-29

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

NOW, THEREFORE, BE IT RESOLVED, by the St. Clair County Board of Commissions, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriated federal and state elected officials.

DATED: August 18, 1998

Reviewed and Approved by:

ELWOOD L. BROWN  
County Corporation Counsel  
301 County Building  
Port Huron, MI 48060

*Rebecca Yarr, Clerk*  
*Clyde Bursch*

MD099

MD099-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

TOWNSHIP OF COLUMBUS  
RESOLUTION 98-08

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM  
TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN  
AND IN ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes;

WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.


NOW, THEREFORE, BE IT RESOLVED, by the Columbus Township Board of Trustees, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

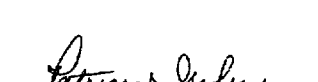
BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

DATED: August 11, 1998

Reviewed and Approved By:

COLUMBUS TOWNSHIP BOARD OF TRUSTEES

  
JAMES V. DUBAY  
Columbus Township Attorney  
68650 Main Street  
Richmond, MI. 48062

  
By: Patricia Iseler  
Columbus Township Clerk

MD023

MD023-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.



My name is Mat Dudus. I'm just calling to let you guys know that recently there was this article in the Detroit Free Press on Thursday, August 27th concerning a possible shipment of plutonium to Michigan to Canada. I hope you guys choose Michigan now even more so because this is, this reporting is just crazy on their part to scare up some sales of papers and scare people about plutonium. I'm happy, I'd be more than happy to allow you guys to come through Michigan. I'd escort you myself. I'm, thank you very much. Good bye. Oh by the way, if you needed my phone, home phone number, it's (313) 640-0283.

1

PD042

**PD042-1** **Parallex EA**  
DOE acknowledges the commentor's support of transporting material through Michigan. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action, the Parallex Project; therefore, it is beyond the scope of the proposed action analyzed in this SPD EIS. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

RESOLUTION

Charter Township of East China  
County of St. Clair, Michigan

Minutes of a regular meeting of the Township Board of the Charter Township of East China, County of St. Clair, Michigan, held in the Township Hall, on the 3rd day of August, 1998, at 7:30 p.m., Eastern Daylight Savings Time.

PRESENT: Barker, Beaudua, Horn, Light, Parcell and Smith.

ABSENT: Trustee Randolph.

The following Resolution was offered by Member Light and supported by Member Horn.

RESOLUTION  
URGING THE UNITED STATES DEPARTMENT OF ENERGY  
TO REFRAIN FROM TRANSPORTING  
WEAPONS-USABLE FISSILE MATERIAL  
THROUGH MICHIGAN  
AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

NOW, THEREFORE, BE IT RESOLVED, by the Charter Township of East China Board of Trustees, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

MD011

MD011-1

Parallex EA

The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

All resolutions and parts of resolution insofar as they conflict with the provisions of this resolution be and the same hereby are rescinded.

AYES: Barker, Deaudua, Horn, Light, Parcell and Smith.

NAYS: None.

ABSENT: Randolph.

RESOLUTION DECLARED ADOPTED

  
SANDRA A. SMITH, CLERK  
CHARTER TOWNSHIP OF EAST CHINA

CERTIFICATION

I hereby certify that the foregoing is a true and correct copy of a Resolution adopted by the Township Board of the Charter Township of East China, St. Clair County, Michigan, at a regular meeting held on August 3, 1998, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and have been or will be made available as required by said Act.

  
SANDRA A. SMITH, CLERK  
CHARTER TOWNSHIP OF EAST CHINA

cc:es

RESOLUTION 98-05  
EMMETT TOWNSHIP

A resolution to urge the United States Department of Energy to refrain from transporting weapons-usable fissile material through Michigan and St. Clair County in particular.

Whereas, The United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

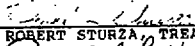
Whereas, There are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and


Whereas, There are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas; now, therefore, be it

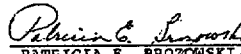
Resolved by the St. Clair County Board of Commissioners, That we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and it further be

Resolved, That a copy of this resolution be transported to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

  
OWEN KEAN, SUPERVISOR

  
ROBERT STURZA, TREASURER

  
DANIEL GREENIA, TRUSTEE

  
PATRICIA E. BROZOWSKI, CLERK

  
JOHN COWHY, TRUSTEE

MD013

MD013-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

Hello, my name is Keith Gunter. I reside at 37232 Great Oaks Court, Clinton Township, Michigan 48036. I'm calling to request that the DOE do a 90 day extension on public comment on the plutonium/MOX issue. Would very much appreciate your giving us more of an opportunity to comment on this very important issue and also to take Representative David Bonior's advice for Michigan to have hearings in the Port Huron, Michigan/Canada, Ontario area. Thank you very much

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PD056

PD056-1

Parallex EA

DOE acknowledges the commentor's concern regarding transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites and therefore, with the most directly concerned population. This decision did not preclude relevant comment by State and local governments, individuals, and organizations in Michigan. Approximately 1,700 copies of the SPD Draft EIS were mailed, and an NOA letter was mailed to an additional 5,500 members of the public. Several means were available for providing comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Equal consideration was given to all comments, regardless of how or where they were received. DOE does not believe that any extension of the comment period on the SPD Draft EIS is necessary. Moreover, DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

RES 98-8-4

**URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM TRANSPORTING WEAPONS - USABLE FISSILE MATERIAL THROUGH MICHIGAN AND ST. CLAIR COUNTY IN PARTICULAR**

**WHEREAS**, the United States Department of Energy is studying transportation options for moving weapons - usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

**WHEREAS**, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply on the Great Lakes; and

**WHEREAS**, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

**NOW, THEREFORE, BE IT RESOLVED**, by the Ira Township Board, that we urge the United States Department of Energy to refrain from Transporting weapons - usable fissile materials through Michigan and St. Clair County; and

**BE IT FURTHER RESOLVED**, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

DATED: August 14, 1998

MD116

**MD116-1**

**Parallex EA**

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

CERTIFICATION OF CLERK

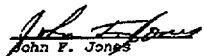
I hereby certify that the foregoing is a true and complete copy of a Resolution duly adopted by the Township Board of Ira Township, County of St. Clair, State of Michigan, at a regular meeting held on the 17<sup>th</sup> day of August, 1998 at which the following members were present: Thomas Jeannette, John Jones, Peter Vernier, Crystal Sovey and absent was Frieda Blackstock, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

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I further certify that member Crystal Sovey moved adoption of said Resolution and member Thomas Jeannette supported said motion.

I further certify that the following members voted for adoption of said Resolution: Jeannette, Jones, Vernier and Sovey and none voted against adoption of said Resolution.

I further certify that the said Resolution has been recorded in the Resolution Book of Ira Township, and that such recording has been authenticated by the signatures of the Township Supervisor and the Township Clerk.

  
John F. Jones  
Supervisor

  
Frieda M. Blackstock  
Clerk Deputy Clerk

Dated: August 17, 1998

MD116

City of Marine City  
County of Saint Clair, Michigan

Resolution 98-27

Resolved by the City Commission of the City of Marine City, County of Saint Clair, Michigan, at their regular meeting held in the Guy Center, 303 S. Water Street, Marine City, Michigan, on August 6, 1998, at 7:00 P.M., a resolution urging the United States Department of Energy to refrain from transporting weapons-usable fissile material through Michigan and Saint Clair County in particular.

PRESENT: Beattie, Dunn, Fisher, Nasto, Negro, Petitpren  
and Roehrig  
ABSENT: None

The following preamble and resolution were offered by Commissioner Roehrig,  
and supported by Commissioner Dunn

WHEREAS, The United States Department of Energy is studying transportation options for moving weapons-usable fissile material, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, There are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, There are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas; now

THEREFORE, BE IT RESOLVED, by the Marine City City Commission, That we urge the United States Department of Energy to refrain from transporting weapons-fissile materials through Michigan and Saint Clair County and from utilizing the Blue Water Ferry between the City of Marine City and Sombra, Canada; and

FURTHER BE IT RESOLVED, That a copy of this resolution be transported to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate Federal and State elected officials.

Yeas: Beattie, Dunn, Fisher, Nasto, Negro, Petitpren and  
Roehrig  
Nays: None

ATTEST:

Sherry McAnally, City Clerk

Robert F. Beattie, Mayor

MD020

MD020-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.





CITY OF  
MARINE CITY  
300 Broadway  
MARINE CITY, MICHIGAN 48039  
(810) 765-8846 • Fax (810) 765-4010

August 7, 1998

U.S. Department of Energy  
Office of Fissile Materials Disposition  
P.O. Box 23786  
Washington, DC 20026-1786

Re: Michigan Public Hearing

Dear Sir:

It has come to our attention the Department of Energy is scheduling meetings in many states to take public comment on the disposition of fissile materials. The officials and residents of the City of Marine City are interested in this issue, as are many small towns and local governments, especially since one disposal route utilizes Michigan thoroughfares.

Please consider this a formal request to schedule public meetings in Michigan. It only makes sense to consider public comment elicited from government officials and residents of communities along a proposed disposal transportation route. To not do so would seem to imply disinterest or indifference to those local attitudes and opinions.

It is our collective opinion the Department of Energy is neither disinterested nor indifferent to local opinions concerning this matter. We hope the Department will demonstrate an interest by conducting public meetings here in Michigan. I hope to receive a timely response to this request that can be conveyed to the Marine City Commission and the City's residents. Please contact me at your earliest convenience in this regard.

Sincerely,

  
David Richards, City Manager

"In The Heart of Blue Water District"

MD105

MD105-1

Parallex EA

DOE acknowledges the commentor's concern regarding transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites and therefore, with the most directly concerned population. This decision did not preclude relevant comment by State and local governments, individuals, and organizations in Michigan. Approximately 1,700 copies of the SPD Draft EIS were mailed, and an NOA letter was mailed to an additional 5,500 members of the public. Several means were available for providing comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Equal consideration was given to all comments, regardless of how or where they were received. DOE does not believe that any extension of the comment period on the SPD Draft EIS is necessary. Moreover, DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

#21-98

RESOLUTION

A RESOLUTION TO URGE THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN AND ST. CLAIR COUNTY IN PARTICULAR.

Moved by Councilman Maples supported by Councilman Orr to adopt the following Resolution:

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many suitable access points other than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas;

NOW, THEREFORE, BE IT RESOLVED that the Marysville City Council requests that the United States Department of Energy host a public meeting in the local affected area to explain the project and to receive public comment; and

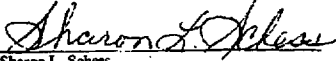
BE IT FURTHER RESOLVED that the sixty (60) day public comment period for this project, which is due to expire September 16, 1998, be extended to allow for a local public meeting; and

BE IT FURTHER RESOLVED that the Marysville City Council urges the United States Department of Energy to refrain from considering transporting weapons-usable fissile materials through Michigan and St. Clair County until said meeting can be held and public comment considered; and

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

ADOPTED:

I hereby certify that the above is a true and correct copy of a resolution adopted at a regular meeting of the Marysville City Council on Monday, August 24, 1998.

  
Sharon L. Schess  
City Clerk CMC

MD127

MD127-1

Parallex EA

DOE acknowledges the commentors' concern regarding transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

*City of Memphis*  
"A pleasant place to live"

3509S Potter Street  
P.O. Box 86  
Memphis, Michigan 48041  
810-392-2385  
Fax: 810-392-3625

**RESOLUTION**

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM  
TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN  
AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying  
transportation options for moving weapons-usable fissile materials,  
including plutonium, for disposition. One of the three options under  
consideration is transporting the nuclear materials and fuel to Canada  
through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and  
carcinogenic materials. The security and environmental risks are  
considerable and utilizing the Blue Water Bridge route would jeopard-  
ize the population of St. Clair County and the water supply of the  
Great Lakes; and

WHEREAS, there are many other suitable access points than the  
international water boundaries of Michigan. The western portions of  
the continent offer access that is much easier to secure and does not  
involve transportation through as many densely populated areas.

NOW, THEREFORE, BE IT RESOLVED, by the Memphis City Council, that  
we urge the United States Department of Energy to refrain from trans-  
porting weapons-usable fissile materials through Michigan and St.  
Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be for-  
warded to the United States Department of Energy Office of Fissile  
Materials Disposition and each of our appropriate federal and state  
elected officials.

\*\*\*\*\*

At a regular meeting of the City Council of the City of Memphis on the  
4th day of August 1998, the following Councilmembers were present:

Garber, Horton, Bulett, Moran, Mayor Tatton, Walleman

and the following Councilmembers were absent:

Zukas

The within Resolution was moved by Councilmember Garber supported by  
Councilmember Moran and adopted by a vote of 5 to 1.

  
Mary I. Brusca, City Clerk

MD012

**MD012-1**

**Parallex EA**

DOE acknowledges the commentors' concern with transportation of material  
through Michigan. The transportation of weapons-usable fissile materials  
through Michigan and St. Clair County is beyond the scope of the proposed  
action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel  
from LANL to Canada were part of a separate proposed action. DOE has  
prepared an *Environmental Assessment for the Parallex Project Fuel  
Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed  
August 13, 1999, on fabrication of the MOX fuel and its transportation to  
Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be  
under renovation during the time of the proposed shipment, the route using  
that bridge was removed from consideration. This EA and FONSI can be  
viewed on the MD Web site at <http://www.doe-md.com>.

RENO DISTRICT  
STATE REPRESENTATIVE  
KAREN WILLARD  
STATE CAPITOL  
LANSING, MICHIGAN 48913  
517-375-1800  
1-800-452-0282

HOUSE OF REPRESENTATIVES  
LANSING, MICHIGAN

HOUSE MAJORITY WHIP  
COMMITTEES  
CHIEF SENIOR CITIZEN  
AND VETERANS AFFAIRS  
AGRICULTURE  
JULY 1997  
TOLSON

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

August 14, 1998

Dear Mr. Canter:

I am writing to communicate my concerns regarding the safety of transporting weapons-grade plutonium fuel over the International Blue Water Bridge in Port Huron, Michigan. I am asking for a sixty day extension on the comment period, which will close on September 16, 1998. I am also requesting a public hearing to be held in the city of Port Huron. It is necessary that the Department of Energy give local residents a chance to seriously analyze the situation and be able to comment.

Michigan is considered one of the alternative routes of transportation of plutonium-based nuclear fuel to Canadian power plants. The route will go directly through my district, which includes Lapeer and St. Clair counties. There is a strong desire of many residents of my district, as well as other affected citizens in Michigan, to attend one of the public meetings to comment and simply gather more information. However, the closest public meeting was scheduled to take place in North Augusta, South Carolina on August 13, 1998. There are no workshops scheduled in the state of Michigan. It is not possible for the vast majority of those expressing concern in my district to attend a meeting so far from their homes and work places.

Also, I ask you to consider alternative routes of travel from the Western U. S. where there are many access points to Canada that do not involve international waterways and high population areas. This waterway is also a major connecting channel in the Great Lakes. The environmental and security risk factors involved in transporting this highly volatile nuclear fuel more than 2,000 miles over ground through some of the most densely populated areas of the U. S. and the state of Michigan are deeply concerning.

Again, I am requesting a public hearing on the issue in Michigan. Port Huron would be an excellent meeting place that would allow those affected to be a true part of the process. This is an issue that could have a dramatic effect on the lives of many residents in Michigan. I strongly urge you to allow for adequate comment and education on the issue before you make your final recommendations.

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MD025

**MD025-1** **Parallex EA**

The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites and therefore, with the most directly concerned population. This decision did not preclude relevant comment by State and local governments, individuals, and organizations in Michigan. Approximately 1,700 copies of the SPD Draft EIS were mailed, and an NOA letter was mailed to an additional 5,500 members of the public. Several means were available for providing comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Equal consideration was given to all comments, regardless of how or where they were received. DOE does not believe that any extension of the comment period on the SPD Draft EIS is necessary. Moreover, DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

Thank you for the opportunity to express my views on this important issue. I hope that you will seriously consider my input.

Sincerely,



Karen Willard  
State Representative  
82nd District

MD025



**OFFICE OF THE MAYOR**  
CITY OF PORT HURON  
100 MCMORAN BOULEVARD, PORT HURON, MICHIGAN 48060  
PHONE: 810-984-9740; FAX: 810-982-0282

August 17, 1998

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

Dear Energy Officials:

*It has come to our attention that the U. S. Department of Energy is studying transportation options for moving nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge in Port Huron.*

*At the Port Huron City Council's last meeting, the enclosed resolution was unanimously adopted. The Council and residents of our community and surrounding area are interested in hearing an explanation of the project and to be able to provide public comment on this matter.*

*We would appreciate your cooperation in arranging such a meeting. Please give me a call if you have any questions or concerns.*

Sincerely,

Gerald "Ajax" Ackerman  
Mayor

GA/smc

Enclosure

MD053

**MD053-1**

**Parallex EA**

The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

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Resolution # 27  
August 10, 1998

Councilmember Miller offered and moved the adoption of the following resolution:

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many suitable access points other than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas;

NOW, THEREFORE, BE IT RESOLVED that the Port Huron City Council requests that the United States Department of Energy host a public meeting in the local affected area to explain the project and to receive public comment; and

BE IT FURTHER RESOLVED that the sixty (60) day public comment period for this project, which is due to expire September 16, 1998, be extended to allow for a local public meeting; and

BE IT FURTHER RESOLVED that the Port Huron City Council urges the United States Department of Energy to refrain from considering transporting weapons-usable fissile materials through Michigan and St. Clair County until said meeting can be held and public comment considered; and

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

ADOPTED/REJECTED *UNANIMOUSLY*

*I hereby certify that the above is a true and correct copy of a resolution adopted at a regular meeting of the Port Huron City Council on Monday, August 10, 1998.*

  
Pauline M. Repp, CMC  
City Clerk

MD053

SISTERS, SERVANT OF THE IMMACULANT HEART OF MARY  
MARTHA RABAUT  
PAGE 1 OF 1

Sisters, Servant of the Immaculate Heart of Mary  
610 West Elm Ave.  
Monroe, MI 48162

To: The Department of Energy  
Regarding: Mixed Oxide Fuel

We are very concerned about the proposed plans to test and possibly allow the use of mixed oxide fuel. Please grant a 90 day extension for comments on this issue. The gravity of the issue warrants further time for public education and comment.

We are very grateful for your consideration of this matter.

Sincerely,  
*Martha Rabaut, L.H.M.*

Martha Rabaut, L.H.M.  
Eco Justice Office of the Sisters,  
Servant of the Immaculate Heart of Mary

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FD309

FD309-1

General SPD EIS and NEPA Process

The comment period for the SPD Draft EIS extended from July 17 through September 16, 1998. During that time, DOE convened five public hearings comprising afternoon and evening workshops to obtain oral and written comments from the public. It also accepted comments submitted by various other means: mail, a toll-free telephone and fax line, and the MD Web site. In view of the ample opportunities to comment and the urgency of the surplus plutonium disposition program, the comment period was not extended.



RESOLUTION NO. 98-19

CITY OF ST. CLAIR  
ST. CLAIR COUNTY, MICHIGAN

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO  
REFRAIN FROM TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL  
THROUGH MICHIGAN, AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

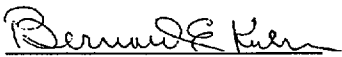
WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

NOW, THEREFORE, BE IT RESOLVED by the St. Clair City Council, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

RESOLUTION DECLARED ADOPTED

  
BERNARD E. KUHN, MAYOR  
CITY OF ST. CLAIR, MICHIGAN

MD084

MD084-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

CERTIFICATION

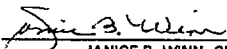
The foregoing is a true and complete copy of a Resolution adopted by the City Council of the City of St. Clair, County of St. Clair, State of Michigan, at a regular meeting of the City Council held on the 3<sup>rd</sup> day of August 1998, and public notice of said Meeting was given pursuant to and in accordance with the requirements of Act No. 267 of the Public Acts of 1976, as amended, the same being the Open Meetings Act, and the Minutes of said meeting have been or will be made available as required by said Act.

Members Present: Mayor Kuhn, Members Ellery, Ferlito, LaPorte, Stablein, Stockhausen  
Members Absent: Cedar

It was moved by Member Ellery and supported by Member LaPorte to adopt the resolution.

Members Voting Yes: Stablein, Stockhausen, Ellery, Ferlito, Kuhn, LaPorte  
Members Voting No: None

The Resolution was declared adopted by the Mayor and has been duly recorded in the Resolution Book of the City of St. Clair.

  
JANICE B. WINN, CITY CLERK  
CITY OF ST. CLAIR, MICHIGAN

MD084

AUG 6 1999

RESOLUTION 98-29

URGING THE UNITED STATES DEPARTMENT OF ENERGY TO REFRAIN FROM  
TRANSPORTING WEAPONS-USABLE FISSILE MATERIAL THROUGH MICHIGAN  
AND ST. CLAIR COUNTY IN PARTICULAR

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium, for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of the Great Lakes; and

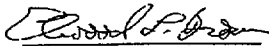
WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.




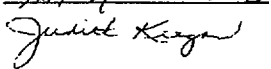
NOW, THEREFORE, BE IT RESOLVED, by the St. Clair County Board of Commissioners, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

DATED: July 22, 1998

Reviewed and Approved by:

  
ELWOOD L. BROWN  
County Corporation Counsel  
301 County Building  
Port Huron, MI 48060

MD004

MD004-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

ST. CLAIR TOWNSHIP  
1539 S. Bartlett Rd., St. Clair, MI 48079  
Phone (810) 329-9042 Fax (810) 329-1198

ST. CLAIR TOWNSHIP  
RESOLUTION

WHEREAS, the United States Department of Energy is studying transportation options for moving weapons-usable fissile materials, including plutonium for disposition. One of the three options under consideration is transporting the nuclear materials and fuel to Canada through Michigan utilizing the Blue Water Bridge at Port Huron; and

WHEREAS, there are many problems with transporting volatile and carcinogenic materials. The security and environmental risks are considerable and utilizing the Blue Water Bridge route would jeopardize the population of St. Clair County and the water supply of Great Lakes; and

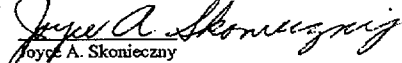
WHEREAS, there are many other suitable access points than the international water boundaries of Michigan. The western portions of the continent offer access that is much easier to secure and does not involve transportation through as many densely populated areas.

NOW, THEREFORE, BE IT RESOLVED, by the St. Clair Township Board, that we urge the United States Department of Energy to refrain from transporting weapons-usable fissile materials through Michigan and St. Clair County; and

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to the United States Department of Energy Office of Fissile Materials Disposition and each of our appropriate federal and state elected officials.

Dated: August 3, 1998

Reviewed and Approved by:

  
Joyce A. Skonieczny  
Clerk

MD015

MD015-1

Parallex EA

DOE acknowledges the commentors' concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

STATEWIDE PUBLIC ADVISORY COUNCIL  
KATHY EVANS  
PAGE 1 OF 1



## STATEWIDE PUBLIC ADVISORY COUNCIL

September 24, 1998

Mr. Howard R. Canter  
Acting Director  
Office of Fissile Materials Disposition  
Department of Energy  
P.O. Box 23786  
Washington, D.C. 20026-3786

RE: Public Review of Surplus Plutonium Disposition Draft Environmental Impact Statement

Dear Mr. Canter:

I am writing on behalf of the Statewide Public Advisory Council for Michigan's Areas of Concern Program to express support for the recent request from the St. Clair River Binational Public Advisory Council (BPAC) for an additional 60 days for public review and comment on the plan to ship surplus plutonium across the Bluewater Bridge linking the United States and Canada. The BPAC has also requested that a public meeting be held in the local area to provide information and respond to questions on the proposal.

The Statewide Public Advisory Council (SPAC) includes representatives from the 14 Areas of Concern (AOC) in the State of Michigan designated pursuant to the U.S.-Canada Great Lakes Water Quality Agreement. The SPAC provides advice and input to the State of Michigan regarding the statewide AOC Program, coordinates the exchange of information among the state's 14 AOCs, and works to support the efforts of the local public advisory councils to restore environmental quality in the AOCs.

At its September 12, 1998 meeting the SPAC was briefed on the St. Clair River BPAC's concerns about the plan to ship surplus plutonium across the Bluewater Bridge and their request for an extension of the public comment period and for a public meeting on the issue. The SPAC approved a motion supporting the BPAC's request and the purpose of this letter is to formally convey this position to your office. By extending the public comment period and holding a public meeting in the local area, the U.S. and Canadian federal governments will be able to share information with and receive input on the proposed shipment from the many American and Canadian citizens working to restore environmental quality in the St. Clair River.

The SPAC appreciates your attention to this request and looks forward to your response. I at 773-0008; please respond to the address provided below.

Sincerely,

Kathy Evans  
Vice Chair  
Statewide Public Advisory Council

cc: Fred Kemp, United States Chair, St. Clair River BPAC  
Bob Lalonde, Canadian Chair, St. Clair River BPAC  
Members, Statewide Public Advisory Council  
Richard Hobbs, Chief, Remedial Action Unit, Michigan Department of Environmental Quality

c/o Great Lakes Commission • The Argus II Building • 400 Fourth St. • Ann Arbor, MI 48103-4816  
Phone: (313) 665-9135 • Fax: (313) 665-4370 • Email: SPAC@glc.org

Printed on recycled paper.

MD324

## MD324-1

## Parallex EA

DOE acknowledges the commentor's concern with transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites and therefore, with the most directly concerned population. This decision did not preclude relevant comment by State and local governments, individuals, and organizations in Michigan. Approximately 1,700 copies of the SPD Draft EIS were mailed, and an NOA letter was mailed to an additional 5,500 members of the public. Several means were available for providing comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Equal consideration was given to all comments, regardless of how or where they were received. DOE does not believe that any extension of the comment period on the SPD Draft EIS is necessary. Moreover, DOE does not believe that a hearing in Michigan is necessary because none of the actions addressed in this SPD EIS would occur there.

Good morning, my name is Greg Zolae, I'm a voter in Comstock, MI. Just recently received some information about MOX fuel transportation and I would like to get some more information, if I could. I would also like to strongly suggest that there is an extension for public comment on the transportation of MOX fuel so that folks that are going to be affected by it can find out more about it and can voice their opinions. My temporary mailing address is Greg Zolae, 3 Fairlake Lane, Gross Point Shores, Michigan 48236. Again, I would like to request a 90 day extension on the public comment on the transportation of MOX fuel. It would be really good for us to have a little bit more time to learn from you what it's about and to tell you what we think. Thank you very much.

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PD055

PD055-1

Parallex EA

DOE acknowledges the commentor's concern regarding transportation of material through Michigan. The transportation of weapons-usable fissile materials through Michigan and St. Clair County is beyond the scope of the proposed action analyzed in this SPD EIS. Shipments of a small quantity of MOX fuel from LANL to Canada were part of a separate proposed action. DOE has prepared an *Environmental Assessment for the Parallex Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI, signed August 13, 1999, on fabrication of the MOX fuel and its transportation to Canada. Because the Blue Water Bridge in Port Huron, Michigan, will be under renovation during the time of the proposed shipment, the route using that bridge was removed from consideration. This EA and FONSI can be viewed on the MD Web site at <http://www.doe-md.com>.

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140 ARBORWAY, STE. 6, BOSTON, MA 02130-3522 USA  
(617) 524-1342 • fax (617) 524-1347 • contact@ifnotnow.com

To: DOE, Fax 18008205156  
From: If Not Now: A Citizens Lobbying Tool, EMail rep-info@ifnotnow.com  
Date: Sep 10, 1998 13:44 GMT  
Subject: Plutonium Disposal By Burning In Nuclear Reactors

If Not Now is a web-based citizen's lobbying tool. We are forwarding to you a letter from some of your constituents. At the end of this message there is a description of how our service works and how you can respond to your constituents.

Signatures as of Sep 10, 1998:  
There were 2 new signers. Total signers to date: 2.

TOPIC: Plutonium Disposal By Burning In Nuclear Reactors

Dear DOE (Fissile Materials Program),

I am writing to oppose the current Department of Energy plan for plutonium disposition, which is based on mixed-oxide (MOX) fuel. MOX fuel is a bad idea. It is unproven technology as far as commercial reactors in the U.S. are concerned. MOX techniques for plutonium disposal are also slower and more expensive than immobilization techniques. In addition, the treatment of plutonium as an energy source sets a dangerous precedent for nuclear proliferation and the development of plutonium fuel economies. It is essential that the DOE do everything possible to discourage this proliferation.

New signers and comments:

Scott Bonner, Boise, ID 83702  
Amy Hobbs, Springfield, MO 65806

DESCRIPTION OF IF NOT NOW SERVICE

Subscribers use If Not Now ([www.ifnotnow.com](http://www.ifnotnow.com)) to get information about political and social issues of concern to them. The service also enables them to sign letters about these topics, which we then forward in consolidated form to officials such as yourself. It is important to emphasize that our subscriber list is authenticated through credit card verification, and only those signers who belong to your specific constituency are included in the signature list that you receive.

FD300

FD300-1

MOX Approach

DOE acknowledges the commentator's opposition to the MOX approach to surplus plutonium disposition. While it is true MOX fuel has not been produced commercially in the United States, it has been produced in Western Europe. MOX fuel fabrication is not a new technology. This experience would be used for disposition of the U.S. surplus plutonium. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

Any difference between the cost of the hybrid approach and that of the immobilization-only approach would be marginal. Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyses the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.



140 ARBORWAY, STE. 6, BOSTON, MA 02130-3522 USA  
(617) 524-1342 • fax (617) 524-1347 • [contact@ifnotnow.com](mailto:contact@ifnotnow.com)

An important feature of If Not Now is that we follow up on every action letter that we send, and we report how representatives, officials and others have acted on the issue. We also provide you with the opportunity to respond to your constituents (via a password-protected web server, to ensure that only legitimate responses are posted). Follow the directions below. Your letter will be posted without editing; your constituents will be able to view your response when they check the results of that action. (We regret that we cannot process responses received via fax or US mail.) We strongly encourage you to send us a response! Our subscribers are active, involved citizens who want to hear from you.

To respond to an action letter: fill out the form at <http://www.ifnotnow.com/respond.html> -- you will need to use your special key: PeeTJlwV. This key is valid for one-time use only. Please send questions or comments via email to: [rep-info@ifnotnow.com](mailto:rep-info@ifnotnow.com).

FD300



<input checked="" type="checkbox"/>	<b>YES!</b>	Keep Texas Panhandle water, air, and soil safe from radioactive pollutants	1
<input checked="" type="checkbox"/>	<b>NO!</b>	To any plutonium processing in the Texas Panhandle <i>or anywhere else!</i>	2
<input checked="" type="checkbox"/>	<b>YES!</b>	To minimal handling and processing of plutonium and other nuclear materials	3
<input checked="" type="checkbox"/>	<b>NO!</b>	To converting military plutonium for use in mixed oxide (MOX) fuel	4

*How DARE YOU MAKE US PAY FOR THIS  
STOP PRODUCING THIS DEADLY  
poison*

Signed: *Michele Bush*  
*Silver City NV.*

CD1358

**CD1358-1** **Alternatives**  
Sections 4.17 and 4.26.3 describe the potential effects of the maximum impact alternative on air quality, water resources, and soil. These analyses indicate that the impacts of construction and normal operation of the pit conversion and MOX facilities on air, water, and soil at Pantex would likely be minor.

**CD1358-2** **Alternatives**  
DOE acknowledges the commentor's opposition to the surplus plutonium disposition program at Pantex. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

**CD1358-3** **DOE Policy**  
The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. DOE is committed to public and worker safety during the construction, operation, and deactivation of the proposed surplus plutonium disposition facilities, and would implement appropriate controls and procedures to ensure compliance with all applicable Federal, State, and local laws, rules, regulations, and requirements.

**CD1358-4** **MOX Approach**  
DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in weapons again.

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

Hi. I'm calling Donna Menace and I want to thank her very much for calling me back. The way, my address is PO Box 2598 and its Pahrump, NV 89041. I'm interested in whatever it is she want to send me because I do want to make commentary. I'm very concerned about the MOX and if it can't be used in the light water reactors, so whatever you do is right. And I look forward to hearing from you. I've been out of town and that's why I didn't return your call sooner. Thank you again. My number is (702) 727-6853 if you want to call. And the best time I will be home in the morning. Thank you. Bye

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PD032

PD032-1

MOX Approach

DOE acknowledges the commentor's concern regarding the MOX approach. The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.

170 Villanova Drive  
Paramus, NJ 07652  
July 31, 1998

Executive Director  
U.S. Department of Energy  
Washington, DC

Dear Director:

I am vehemently opposed to the use of MOX fuel in civilian nuclear power plants.

There are already serious problems of unaccounted for sensitive materials without putting weapons grade plutonium in mass circulation.

Every step in the direction of putting us on a plutonium economy risks unconscionable environmental, economic, and weapons proliferation problems.

The nuclear industry has failed miserably in its responsibility to the general welfare.

The last thing we need now is another arrogant, corrupt blunder.


Very truly yours,  
*Sidney J. Goodman, P.E.*  
Sidney J. Goodman, P.E.  
Professional Engineer

FD173

FD173-1

MOX Approach

DOE acknowledges the commentator's opposition to the commercial use of weapons-usable plutonium. The proposed use of MOX fuel is consistent with the nonproliferation policy and would ensure that plutonium which was produced for nuclear weapons and subsequently declared excess to national security needs is never again used for nuclear weapons. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.



State of New Jersey  
Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Office of Program Coordination  
PO Box 418  
Trenton, NJ 08625-0418  
Phone 609-292-2662  
Fax 609-777-0942

August 25, 1998

Mr. G. Bert Stevenson  
NEPA Compliance Officer  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
P.O. Box 23786  
Washington, D.C. 20026-3786

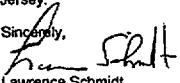
RE: COMMENTS  
Surplus Plutonium Disposition Draft EIS  
DOE/EIS-0283-D

Dear Mr. Stevenson:

The Office of Program Coordination of the New Jersey Department of Environmental Protection (NJDEP) has completed its review of the Draft Environmental Impact Statement (EIS) for Surplus Plutonium Disposition. None of the three proposed sites are in the Northeast, consequently our Department's Radiation Protection Programs foresees no environmental impact to New Jersey, at this time, from the siting, construction or operation of any of the facilities. In addition, they foresee no increase in transportation of radioactive materials in New Jersey as result of this action.

However, one alternative facility would produce Mixed Oxide Fuel (MOX). This fuel would be manufactured as fuel for a commercial nuclear power plant. As stated in the Draft EIS, specific reactor sites where this fuel will be used have not been identified. The Final EIS will include an environmental impact analysis related to specific reactors selected. Thus, there is no indication, at this time, if any nuclear power plants in New Jersey will utilize MOX fuel.

Please send the Office of Program Coordination two copies of the Final EIS, when it becomes available, so that we can review potential environmental impacts associated with the use of MOX fuel in New Jersey.

Sincerely,  
  
Lawrence Schmidt  
Director  
Office of Program Coordination

C: Jill Lipoti, NJDEP

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MD115

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2

**MD115-1** **Alternatives**  
DOE acknowledges the commentor's conclusions that the surplus plutonium disposition program would not impact the State of New Jersey.

**MD115-2** **MOX Approach**  
Section 4.28 was revised to discuss the potential environmental impacts of using MOX fuel in the six reactors proposed for the MOX approach. None of the proposed reactors are in New Jersey, they are: Catawba Nuclear Station Units 1 and 2 in South Carolina, McGuire Nuclear Station Units 1 and 2 in North Carolina, and North Anna Power Station Units 1 and 2 in Virginia.

I would like to submit the following comments for the ~~scoping on~~ the Surplus Plutonium Disposition Environmental Impact Statement:

- 1
- 2
- 3
- 4
- 1) The mixed-oxide (MOX) nuclear fuel option has a negative economic value, will result in unnecessary subsidies to nuclear power utilities, and is experiencing grave technical challenges. A range of immobilization options need to be addressed as more viable for disposition.
  - 2) Plutonium processing has never occurred at Pantex and for this reason it is a relatively clean site. I believe it is unwise to locate plutonium processing at a site with no processing and minimal nuclear waste treatment experience, especially one located over a major aquifer and in the middle of rich agricultural producing land.
  - 3) Environmental, safety, and health impacts must be fully identified and analyzed, including quantity and composition of waste streams, potential accident scenarios, and consequences of accidents.
  - 4) The impact on the area agricultural economy needs to be addressed at length in this document.

Signed Kathryn Albrecht, NM

CD1700

CD1700-1

Alternatives

Use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors.

The fabrication of MOX fuel and its use in commercial reactors has been accomplished in Western Europe. This experience would be used for disposition of the U.S. surplus plutonium.

The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

DOE has identified as its preferred alternative the hybrid approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

CD1700-2

Alternatives

DOE acknowledges the commentor's opposition to siting the proposed surplus plutonium disposition facilities at Pantex. The analyses presented in

Comment Documents and Responses—New Mexico

Section 4.26.3.2.2 indicate that there would be no discernible impacts on the quality of water in the Ogallala aquifer from normal operation of these facilities. Other sections show, moreover, that the normal operation of these facilities would likely have minor impacts on human health, agriculture, and livestock: Sections 4.17.1.4 and 4.17.2.4 address the potential radiological and hazardous chemical effects of the maximum-impact alternative on workers and the public at Pantex; Appendix J.3, the potential contamination of agricultural products and livestock, and consumption of these products by persons living within an 80-km (50-mi) radius of Pantex.

CD1700-3

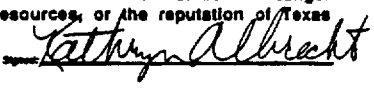
General SPD EIS and NEPA Process

DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). DOE has analyzed the potential environmental impacts of waste management, human health risks, and facility accidents associated with the proposed surplus plutonium disposition facilities as discussed in Appendixes H, J, and K, respectively.

CD1700-4

General SPD EIS and NEPA Process

This comment is addressed in responses CD1700-2 and CD1700-3.

<input checked="" type="checkbox"/>	NO! To plutonium processing in the Texas Panhandle.	1
<input checked="" type="checkbox"/>	NO! To bringing plutonium to Pantex from other sites.	
<input checked="" type="checkbox"/>	NO! To long-term storage of plutonium over the Ogallala Aquifer.	2
<input checked="" type="checkbox"/>	NO! To facilities that handle nuclear waste or to processes that generate it.	1
I support jobs and development in the Panhandle that don't endanger workers, my family, our natural resources, or the reputation of Texas agricultural products.		3
		
— o —		

CD1701

CD1701-1

Alternatives

DOE acknowledges the commentor's opposition to the surplus plutonium disposition program at Pantex. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

CD1701-2

DOE Policy

DOE acknowledges the commentor's concern regarding the safe storage of plutonium pits at Pantex. DOE is committed to the safe, secure storage of pits and is evaluating options for upgrades to Pantex Zone 4 facilities to address plutonium storage requirements. Evaluation of repackaging Pantex pits into a more robust container is documented in the *Supplement Analysis for: Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components—AL-R8 Sealed Insert Container* (August 1998). This document is on the MD Web site at <http://www.doe-md.com>. Based on this supplement analysis, the decision was made to repackage pits at Pantex into the AL-R8 sealed insert container and to discontinue plans to repackage pits into the AT-400A container.

CD1701-3

Alternatives

DOE acknowledges the commentor's support of new missions at Pantex that don't endanger people or the environment. The analyses presented in Section 4.26.3.2.2 indicate that there would be no discernible impacts on the quality of water in the Ogallala aquifer from normal operation of the proposed surplus plutonium disposition facilities. Other sections show, moreover, that the normal operation of these facilities would likely have minor impacts on human health, agriculture, and livestock; Sections 4.17.1.4 and 4.17.2.4 address the potential radiological and hazardous chemical effects of the maximum-impact alternative on workers and the public at Pantex; Appendix J.3, the potential contamination of agricultural products and livestock, and consumption of these products by persons living within an 80-km (50-mi) radius of Pantex.





GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
ENVIRONMENT DEPARTMENT  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502-6110  
Telephone (505) 827-2855  
Fax (505) 827-2836



PETER MAGGIORE  
Secretary

September 23, 1998

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

Dear Mr. Cantor:

RE: SURPLUS PLUTONIUM DISPOSITION DRAFT ENVIRONMENTAL IMPACT STATEMENT;  
OFFICE OF FISSILE MATERIALS DISPOSITION, U.S. DEPARTMENT OF ENERGY; JULY  
1998

This transmits New Mexico Environment Department (NMED) staff comments regarding the above-referenced Draft Environmental Impact Statement (DEIS).

(1) Volume 1, Part A, Page 1-5 Issues that Need to Be or Are Already Addressed Elsewhere. The Nuclear Regulatory Commission should be involved, and their regulations be complied with, in all aspects of the Mixed Oxide (MOX) fabrication process, including the lead fuel assembly fabrication. 1

(2) Volume 2, L.3.3 Ground Transportation Route Selection Process. Shipments of radioactive materials to LANL should use the Santa Fe Relief Route (Route 599) to reduce the potential of a vehicular accident (and subsequent human health risk) while shipping components through the Santa Fe area. 2

(3) The main activities of pit disassembly, conversion, and immobilization, and MOX fuel fabrication were analyzed for sites outside the State of New Mexico. The only activity that might be located at Los Alamos National Laboratory is the fabrication of lead assemblies. An existing building would need to be modified to contain this activity, so welding would be done only inside buildings, limiting emissions. Operational emissions would result from vehicular traffic and emergency diesel generators. The Los Alamos National Laboratory is in an area that is currently in attainment for all National Ambient Air Quality Standards (NAAQS). Based upon the information provided, we would not anticipate any ambient air quality problems as a result of this project. 3

We appreciate the opportunity to comment on this DEIS. Please let us know if you have any questions.

Sincerely,

Gedi Cibas, Ph.D.  
Environmental Impact Review Coordinator

NMED File No. 1191ER

MD325

#### MD325-1

#### NRC Licensing

Under the National Defense Authorization Act (fiscal year 1999), Congress directed that any facility under contract with and for the account of DOE that is used for the purpose of fabricating mixed plutonium-uranium oxide nuclear fuel for use in a commercial nuclear reactor obtain a license from NRC. In this act, Congress also exempted facilities that are used for research, development, demonstration, testing, or other analysis purposes from the licensing requirement.

Early in the preparation of the *Storage and Disposition PEIS* and this SPD EIS, DOE invited NRC to be a cooperating agency for the surplus weapons-usable fissile materials program. NRC declined the offer in favor of being a commenting agency. DOE is conducting regular meetings with NRC on the MOX approach, including fuel design and qualification.

As directed by Congress, NRC will be the regulatory authority for the MOX facility and will continue to be responsible for licensing the reactors, and as such would have to approve the use of MOX fuel through the license amendment process. The lead assemblies would be fabricated at DOE facilities that are not licensed by NRC, but the lead assemblies would meet licensing requirements for irradiation in selected reactors.

#### MD325-2

#### Transportation

DOE acknowledges the commentor's concerns about the transportation route selection process. The shipment of nuclear material (e.g., depleted uranium) using commercial carriers would be the subject of detailed transportation plans in which routes and specific processing locations would be discussed. These plans are coordinated with State, tribal, and local officials. The shipment of waste would be in accordance with the decisions reached on the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F, May 1997) and the *WIPP Disposal Phase Final Supplemental EIS* (DOE/EIS-0026-S-2, November 1997). The transportation of special nuclear materials is the subject of detailed planning with DOE's Transportation Safeguards Division. The dates and times that specific transportation routes would be used for special nuclear materials are classified

information; however, the number of shipments that would be required, by location, has been included in this SPD EIS. Additional details are provided in *Fissile Materials Disposition Program SST/SGT Transportation Estimation* (SAND98-8244, June 1998), which is available on the MD Web site at <http://www.doe-md.com>.

**MD325-3** **Air Quality and Noise**  
DOE acknowledges the commentor’s input. Air quality impacts from construction and normal operation of facilities at LANL for lead assembly fabrication would likely be minor as discussed in Section 4.27.4.1.

Honorable Donna Shalala  
Sec. of Health & Human Services  
200 Independence Ave. SW  
Wash. DC. 20201

Dear madam Secretary:  
We the Uranium workers of the 48 states have a serious problem. We are fighting tooth & nail for our very lives, and there are few of us left alive now. See my testimony before the judicial committee in June.

The President's advisory committee on human radiation experiments in 1995 said that R.E.C.A. (Radiation Exposure Compensation act) of 1990 was an unfair, unjust & inadequate bill, & should be amended.

We now have Mr. Reston's bill (which is really our bill) in the house & Mr. Bingham has a similar bill in the senate but they are going nowhere.

Could you please help us in some way, we tell us what we can do to get things moving.

505-287-3165

Paul Hicks

President New Mexico Uranium Workers

FAX: 505-287-4577 604 B Adams, Santa Fe, NM 87506

MD331

MD331-1

Other

DOE acknowledges the commentor's concerns. However, the impact of radiation on uranium miners is beyond the scope of this SPD EIS. If MOX fuel is used in domestic, commercial reactors as proposed in this EIS there would be less uranium needed to fuel these reactors and therefore less uranium mined. This comment was forwarded to the Department of Health and Human Services to whom it was originally addressed.



140 ARBORWAY, STE. 6, BOSTON, MA 02130-3522 USA  
(617) 524-1342 • fax (617) 524-1347 • contact@ifnotnow.com

To: DOE, Fax 18008205156  
From: If Not Now: A Citizens Lobbying Tool, EMail rep-info@ifnotnow  
Date: Sep 16, 1998 7:04 GMT  
Subject: Plutonium Disposal By Burning In Nuclear Reactors

If Not Now is a web-based citizen's lobbying tool. We are forwarding to you a letter from some of your constituents. At the end of this message there is a description of how our service works and how you can respond to your constituents.

Signatures as of Sep 16, 1998:  
There were 2 new signers. Total signers to date: 4.

TOPIC: Plutonium Disposal By Burning In Nuclear Reactors

Dear DOE (Fissile Materials Program),

I am writing to oppose the current Department of Energy plan for plutonium disposition, which is based on mixed-oxide (MOX) fuel. MOX fuel is a bad idea. It is unproven technology as far as commercial reactors in the U.S. are concerned. MOX techniques for plutonium disposal are also slower and more expensive than immobilization techniques. In addition, the treatment of plutonium as an energy source sets a dangerous precedent for nuclear proliferation and the development of plutonium fuel economies. It is essential that the DOE do everything possible to discourage this proliferation.

New signers and comments:

Krista Bradford, New York, NY 10033  
Danielle Benzinger, Arlington, TX 76006

DESCRIPTION OF IF NOT NOW SERVICE

Subscribers use If Not Now ([www.ifnotnow.com](http://www.ifnotnow.com)) to get information about political and social issues of concern to them. The service also enables them to sign letters about these topics, which we then forward in consolidated form to officials such as yourself. It is important to emphasize that our subscriber list is authenticated through credit card verification, and only those signers who belong to your specific constituency are included in the signature list that you receive.

1

FD312

FD312-1

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. While it is true MOX fuel has not been produced commercially in the U.S., it has been produced in Western Europe. MOX fuel fabrication is not a new technology. This experience would be used for disposition of the U.S. surplus plutonium. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

Any difference between the cost of the hybrid approach and that of the immobilization-only approach would be marginal. Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

**IF NOT NOW...**

140 ARBORWAY, STE. 6, BOSTON, MA 02130-3522 USA  
(617) 524-1342 • fax (617) 524-1347 • [contact@ifnotnow.com](mailto:contact@ifnotnow.com)

An important feature of If Not Now is that we follow up on every action letter that we send, and we report how representatives, officials and others have acted on the issue. We also provide you with the opportunity to respond to your constituents (via a password-protected web server, to ensure that only legitimate responses are posted). Follow the directions below. Your letter will be posted without editing; your constituents will be able to view your response when they check the results of that action. (We regret that we cannot process responses received via fax or US mail.) We strongly encourage you to send us a response! Our subscribers are active, involved citizens who want to hear from you.

To respond to an action letter: fill out the form at  
<http://www.ifnotnow.com/respond.html> -- you will need to use your special key: PeeTJlwV. This key is valid for one-time use only. Please send questions or comments via email to: [rep-info@ifnotnow.com](mailto:rep-info@ifnotnow.com).

FD312

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

PO Box 88 -- Glendale Springs, North Carolina 28649

Phone 336-982-2491 -- Fax 336-982-2594 -- Email lzweller@bluepost.com

August 10, 1998

via facsimile # 800-820-5156

Office of Fissile Materials Management  
U.S. Department of Energy  
PO Box 23786  
Washington, D.C. 20026-3786

Dear Sir or Madam:

We, the undersigned, write to request both a sixty-day extension of the public comment period and additional public hearings in North Carolina on the Draft Surplus Plutonium Disposition Environmental Impact Statement. We write also to support requests by other citizens' groups and individuals for additional public hearings in affected communities. The SPDEIS is the latest National Environmental Policy Act document that will help shape decisions on how to dispose of up to fifty metric tons of weapons usable plutonium that has been declared surplus to national security needs. Full public debate must occur now.

Extend the Public Comment Period for Sixty Days

The Department of Energy is allowing for a sixty day comment period for people to review and provide comments on a large, complex document that references twenty-eight other related NEPA documents, an economic report that not released until July 28, 1998, and numerous Data Reports. The Data Reports are unavailable to people who are not near a Department of Energy Reading Room, yet contain crucial information. For example, on page J-4 of the Draft SPDEIS, DOE wrote that, "source term data for radiological releases, stack heights, and release locations are provided in the Data Reports for the pit conversion, immobilization, and MOX facilities." In other words, the Draft SPDEIS does not contain any data on something as basic as expected quantities of radioactive air pollutants.

Provide for Additional Public Hearings

The Department of Energy is planning only five public hearings, four in the communities closest to DOE sites being considered for new plutonium processing plants, and one regional meeting in a downstream community (Portland). This public hearings schedule will likely dilute the diversity of public comments; inhibit the involvement of downwind and downstream communities that generally bear liabilities without benefits; and skew the public opinion curve in favor of DOE proposals.

DOE should add the following hearings to its list:

1. Regional Hearings in Savannah, Georgia and Columbia, South Carolina. The Savannah River Site is the preferred candidate site for all three new plutonium processing facilities. Real impacts on the Savannah River from SRS operations and accidents are well documented, with the most notable being the December, 1991 tritium leak that quickly reached Savannah, Georgia. DOE

*If a creditor stands before a man's house all day long, demanding payment of his bill,  
the man must either remove the creditor or pay the bill. ~ Alice Paul*

SCD30

SCD30-1

General SPD EIS and NEPA Process

DOE believes that the comment period, longer than required by CEQ's NEPA regulations, allowed sufficient time for public review of the SPD Draft EIS. Although it did not extend the comment period, DOE did consider all comments received after the close of that period. All comments were given equal consideration and responded to.

Appendix J was revised to include expected radiological release quantities from each of the proposed surplus plutonium disposition facilities. DOE's descriptions of the affected environment and the potential environmental impacts in this SPD EIS are in accordance with 40 CFR 1502.15 and 40 CFR 1502.16. These descriptions are no longer than necessary for an understanding of the effects of the alternatives, and the analyses and data are commensurate with the significance of the impact, the less-important information being consolidated, summarized, or referenced. Resources such as the data reports are available in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

SCD30-2

General SPD EIS and NEPA Process

It was not possible to hold hearings in all areas of the country; therefore, the hearings were restricted to locations where the greatest impacts of the proposed surplus plutonium disposition facilities could be expected. DOE did, however, provide various other means for public comment on this SPD EIS: mail, a toll-free telephone and fax line, and the MD Web site. During preparation of the *Storage and Disposition PEIS*, regional hearings were held in locations such as Boston, Chicago, San Francisco, and Denver. Denver was included because the PEIS dealt with the removal of materials from RFETS. DOE made, and is honoring, a commitment to get all plutonium out of RFETS. Additional hearings in Denver were not held because the proposed surplus plutonium disposition facilities would not be sited in the area. Shipment of MOX fuel to Canada for testing is under consideration as part of a separate EA, and is beyond the scope of this EIS. The *Environmental Assessment for the Parallax Project Fuel*

BREDL  
10 August 1998  
page 2

cannot justify a lack of public hearings in Savannah or Columbia, which will bear the greatest liability from its proposals.

2

2. Regional hearings in communities near nuclear reactor sites that are being proposed for irradiation of Mixed Oxide (MOX) fuel. Consortia of utilities and nuclear fuel fabricators are scheduled to submit Proposals for MOX Fuel Fabrication and Irradiation Services August 1998. We request that a public hearing be held in Raleigh and Charlotte, North Carolina, where reactor communities and the affected public are located.

3

DOE has stated that "environmental impact analysis relating to specific reactors will be included in the SPD Final EIS," although these analyses are scheduled to be made by Consortia in their Proposals. During the 1997 Scoping for the SPDEIS, DOE was repeatedly asked to involve nuclear reactor communities in the NEPA process, yet ignored these comments while moving forward on a process to select reactor sites that excludes community input. DOE cannot justify soliciting public comment for the site selection process for plutonium processing facilities, while excluding public involvement in selecting plutonium irradiation facilities.

3. A regional hearing in Denver, Colorado. Denver is in proximity to Rocky Flats where approximately 25% of the surplus plutonium is in storage, so the area has a stake in the decisions being made. Furthermore, DOE has never held hearings to discuss plutonium immobilization of Rocky Flats plutonium as a reasonable alternative, and is proposing to weaken the requirements for shipping plutonium from Rocky Flats to Savannah River Site.

2

4. A regional hearing in Dallas, Texas. Dallas is likely to be in the transportation corridor for shipments of special nuclear materials and radioactive waste from new operations. The Department of Energy cannot legitimately claim that state-wide support exists in Texas for Pantex becoming a new DOE plutonium processing site without seeking input from outside the Amarillo area.

5. A hearing in Washington D.C., where decisions are made, policy is formulated, and a substantial community of non-governmental organizations exists to monitor the Department of Energy, and where a larger community of organizations exists to monitor how taxpayer dollars are spent.

6. Port Huron, Michigan (or other location), the location of the border crossing for plutonium fuel shipments to Chalk River, Ontario to test in CANDU reactors. DOE is still considering the option of burning MOX fuel in CANDU reactors, yet has effectively excluded Canadian citizens from the process. The hearing could be a cooperative public event held with the Atomic Energy of Canada, Ltd.

The abundant uncertainties and recent changes in direction in the Department of Energy's hazardous plutonium disposition program indicates a continued need to subject Federal proposals to the highest and most rigorous levels of public debate possible. DOE has already failed to

4

*If a creditor stands before a man's house all day long, demanding payment of his bill,  
the man must either remove the creditor or pay the bill. ~ Alice Paul*

SCD30

*Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI (August 1999) can be viewed on the MD Web site at <http://www.doe-md.com>.

DOE actively sought public comments on the SPD Draft EIS and distributed approximately 1,700 copies of the document to all interested parties. All comments, regardless of how they were submitted, were given equal consideration and responded to.

#### SCD30-3

#### General SPD EIS and NEPA Process

Regional public hearings on the nuclear reactor sites proposed for the irradiation of MOX fuel could not be conducted during the public comment period for the SPD Draft EIS, as no sites had been designated by that time. The SPD Final EIS was not issued until specific reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999.

#### SCD30-4

#### General SPD EIS and NEPA Process

Since the inception of the fissile materials disposition program, DOE has supported a vigorous public participation policy. It has conducted public hearings in excess of the minimum required by NEPA regulations to engender a high level of public dialogue on the program. The office has also provided the public with substantial information in the form of fact sheets, reports, exhibits, visual aids, and videos related to fissile materials disposition issues. It hosts frequent workshops, and senior staff members make presentations to local and national civic and social organizations on request. Additionally, various means of communication—mail, a toll-free telephone and fax line, and a Web site (<http://www.doe-md.com>)—have been provided to facilitate the public

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10 August 1998  
page 3

implement the easiest part of its plutonium storage and disposition program. At Pantex it has abandoned its new "safer" container and a proposed facility upgrade for plutonium pit storage. For Rocky Flats plutonium, it is already amending the "Record of Decision" for the "Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement" to "address the environmental impact of utilizing the K-Reactor facility for plutonium storage, the possibility that plutonium stabilization would be done at SRS instead of at RFETS, the shipment of plutonium to SRS before the APSF storage vault is operational, the shipment of some materials from RFETS that are less than 50% plutonium, and the need to utilize direct metal casting in FB-Line to de-classify some of the RFETS." (Defense Nuclear Facilities Safety Board Weekly Report for Savannah River Site, June 26, 1998).

The National Environmental Policy Act requires Federal Agencies to insure that high quality "environmental information is available to public officials and citizens before decisions are made and before actions are taken", and that substantial and meaningful public involvement in the planning and decision process. By restricting public hearings to a few communities, DOE would be violating the spirit of NEPA.

Signed,

Louis Zeller, Southeast Anti-Reprocessing Project  
Blue Ridge Environmental Defense League  
PO Box 88  
Glendale Springs, NC 28629  
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E-mail: aspalt@mindspring.com  
Visit ARC at: <http://sunsite.unc.edu/arc>

SPD-GS/awg/et/08/98

*If a creditor stands before a man's house all day long, demanding payment of his bill,  
the man must either remove the creditor or pay the bill. ~ Alice Paul*

SCD30

dialogue. It is DOE policy to encourage public input into these matters of national and international importance.

#### SCD30-5

#### Storage and Disposition PEIS and ROD

DOE acknowledges the commentors' concern regarding the safe storage of plutonium pits at Pantex. DOE is committed to the safe, secure storage of pits and is evaluating options for upgrades to Pantex Zone 4 facilities to address plutonium storage requirements. DOE has addressed some of the commentor's concerns in an environmental review concerning the repackaging of Pantex pits into a more robust container. This evaluation is documented in the *Supplement Analysis for: Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components—AL-R8 Sealed Insert Container* (August 1998). This document is on the MD Web site at <http://www.doe-md.com>. Based on this supplement analysis, the decision was made to repackage pits at Pantex into the AL-R8 sealed insert container and to discontinue plans to repackage pits into the AT-400A container.

#### SCD30-6

#### Storage and Disposition PEIS and ROD

DOE conducted a supplement analysis for the early movement to and storage of the RFETS surplus plutonium in Building 105-K after modifications to enable safe, secure plutonium storage. Based on this analysis, DOE issued the amended ROD, referenced by the commentor, in the Federal Register (63 FR 43392) on August 13, 1998, in fulfillment of the letter and spirit of NEPA (40 CFR 1506.6(b)). The decision is contingent on a decision under this SPD EIS to locate an immobilization facility at SRS. A copy of the amended ROD and the supplement analysis is available in the DOE reading rooms and on the MD Web site at <http://www.doe-md.com>.



BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

PO Box 88 -- Glendale Springs, North Carolina 28629 Phone 334-982-7491 -- Fax 334-982-7954 -- Email lzed@bryet.com

Comments of Lou Zeller to the Office of Fissile Materials Disposition  
regarding the Surplus Plutonium Disposition Draft EIS  
August 13, 1998, North Augusta, South Carolina.

My name is Louis Zeller and I am on the staff of the Blue Ridge Environmental Defense League. Our organization was founded in 1984 in response to the Department of Energy's Crystalline Repository Project which planned to bury high level nuclear waste in a deep hole in the ground. Together with thousands of activists, we organized to halt that ill-conceived project.

Today I address the draft EIS for surplus plutonium disposition which would take fissile materials from Hanford, Washington and Rocky Flats, Colorado and move it to the Savannah River Site in preparation for reprocessing. I have studied available documents including the DOE's 6450-01-P on amending the Record Of Decision on the Storage and Disposition of Weapons-Usable Fissile Materials. Although the Amended Record of Decision would increase the transport and storage of plutonium from 10 MT to 11.6 MT, it would also open the door to reprocessing of plutonium into commercial nuclear reactor fuel.

We oppose the planned "burning" of surplus weapons-usable plutonium as mixed oxide fuel in existing commercial light water reactors outlined in the SPDEIS. It is simply not possible to burn plutonium. The continued use of Orwell-like terms to describe DOE actions does nothing to increase public confidence in the DOE's programs. Another example: To "declassify" in DOE newspeak means to reprocess plutonium metal for storage at SRS.

Furthermore, the use of plutonium oxide fuel, or POX, in commercial power reactors will not significantly reduce the amount of plutonium. Nuclear reactors produce plutonium where none existed before. A typical commercial reactor produces 500 pounds of plutonium a year. Government contractors have estimated that using POX in commercial reactors would reduce the total plutonium by only 1%. To this must be added the dangers of reactor component embrittlement caused by the POX fuel's higher neutron flux. This will shorten the expected lifespan of utility reactors and increase the risk and the severity of accidents. Utility ratepayers and the taxpayers will pay for all this, and our children and grandchildren will bear the negative health effects and genetic abnormalities.

Even without an accident, people who live, work, and go to school near the transport routes will be dosed with radiation. The transport casks have never been subjected to real-world tests. In the name of reducing the nuclear threat, the U.S. government will give terrorists thousands of miles of opportunities to seize or sabotage radioactive materials.

In 1994 and 1995, the Foreign Research Reactor Spent Nuclear Fuel program provided the Blue Ridge Environmental Defense League and our allies with an opportunity to expose the myth of nuclear non-proliferation. The firestorm of publicity ignited by the Don't Nuke North/South Carolina Campaign made it impossible for elected officials charged with protection of public health to avoid the issue. Our methods were straightforward, our goal simple: get the word

*If a creditor stands before a man's house all day long, demanding payment of his bill,  
the man must either remove the creditor or pay the bill. ~ Alan Paul*

SCD29

SCD29-1

Storage and Disposition PEIS and ROD

DOE acknowledges the commentor's concern about the movement of fissile materials from Hanford and RFETS to SRS. In order to support the early closure of RFETS and the early deactivation of plutonium storage facilities at Hanford, DOE has modified, contingent upon certain conditions, some of the decisions made in its *Storage and Disposition PEIS* ROD. Hanford and RFETS surplus plutonium would not be of a quality suitable for use as MOX fuel in a domestic, commercial reactor.

U.S. policy dating back to the Ford Administration has prohibited the commercial, chemical reprocessing and separation of plutonium from spent nuclear fuel. The use of U.S. surplus plutonium in existing commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). The proposed use of MOX fuel is consistent with the U.S. nonproliferation policy and would ensure that plutonium which was produced for nuclear weapons and subsequently declared excess to national security needs is never again used for nuclear weapons.

SCD29-2

MOX Approach

DOE acknowledges the commentor's opposition to the use of MOX fuel in commercial reactors. Commentor is correct that using MOX fuel does not destroy all the plutonium. However, the MOX approach does meet the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors.

SCD29-3

General SPD EIS and NEPA Process

The declassification at SRS of plutonium residues from RFETS is the subject of the *Supplement Analysis for Storing Plutonium in the Actinide Packaging and Storage Facility and Building 105-K at the Savannah River Site* (July 1998) and amended ROD for the *Storage and Disposition*

*PEIS*. It is important that this limited amount of material be changed from its current form into a form that does not allow for proliferation of the knowledge or means of nuclear weapons fabrication to terrorists or rogue states. The plutonium resulting from the declassification action could be either immobilized or used to fabricate MOX fuel.

SCD29-4

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach. Although no U.S. commercial reactors are licensed to use plutonium-based fuel, several are designed to use MOX fuel, and others can easily and safely accommodate a partial MOX core. While it is true that not all the plutonium would be consumed during irradiation in a nuclear reactor, the resulting spent fuel would have a radiation barrier equivalent to LEU spent fuel, and recovery of this plutonium would be extremely dangerous, time consuming, and costly.

The higher flux associated with MOX fuel can accelerate reactor component aging. However, this would be taken into account when developing fuel management strategy, including fuel assembly placement in the reactor core. The proposed action anticipates partial, not full, MOX cores in the selected reactors. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

Section 4.28 was revised to provide reactor-specific analyses and discuss the potential environmental impacts of using a partial MOX core during routine operations and reactor accidents.

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution*

## Transportation

Transportation would be required for both the immobilization and MOX approaches to surplus plutonium disposition. Transportation of special nuclear materials, including fresh MOX fuel, would use DOE's SST/SGT system. Since the establishment of the DOE Transportation Safeguards Division in 1975, the SST/SGT system has transported DOE-owned cargo over more than 151 million km (94 million mi) with no accidents causing a fatality or release of radioactive material. The transportation requirements for the surplus plutonium disposition program are also evaluated in this SPD EIS. As indicated in Section 2.18, no traffic fatalities from nonradiological accidents or LCFs from radiological exposures or vehicle emissions are expected.

Table L-6 summarizes the possibility of a LCF associated with the radiation doses from shipping radioactive material. Type B packages have been used for years to ship radioactive materials in the United States and around the world. To date, no Type B package has ever been punctured or released any of its contents, even in actual highway accidents. No Type B package has seen real-world conditions that approach the severity level of the tests. As described in Appendix L.3.1.6, the Type B package is extremely robust and provides a high degree of confidence that even in extremely severe accidents, the integrity of the package would be maintained with essentially no loss of the radioactive contents or serious impairment of the shielding capability.

out. Our traveling roadshow traced the nuclear transport route from Sunny Point to Wilmington to Pembroke and into South Carolina. The Governor of North Carolina responded with scores of Highway Patrolmen, the State Bureau of Investigation, and a helicopter to accompany the nuclear waste trains. The elaborate preparations for accidents underscores the real danger represented by international commerce of nuclear waste.

Exposing these strategically valuable materials to shipment on the nation's highways and byways presents thousands of miles of opportunities for would-be saboteurs, thieves, and terrorists. We demonstrated by our all-night vigil at Sunny Point that anyone so inclined can easily track these shipments. "This just goes to show that any terrorist who can afford a pair of binoculars and a plane ticket could know their every move," said Janet M. Zeller, BREDL's Executive Director. A spokesman for the DOE labeled our actions a "needless breach of security."<sup>4</sup> But the publicity generated by our campaigns does not make sabotage more likely. On the contrary, the increased surveillance and precautions taken by state officials was a direct result of the high media profile.

The Environmental Assessment for the foreign wastes prepared by DOE in 1994 states that the Savannah River Site's receiving basin for the foreign wastes "show no visible signs of corrosion." But in July 1995 a report by the Defense Nuclear Facilities Safety Board inspection team noted that, "significant corrosion of the spent fuel was contaminating the facility, generating significant waste, and contributing to personnel exposure."

The exposure of people living close to the rail lines and highways to ionizing radiation is easily overlooked. Cancers, leukemias, and immune suppression may be delayed for years or decades. Dr. Carl Rupert, BREDL Board of Directors member, estimates the population dose from the expected total of 837 trans-ocean shipments to be 7,885 person-rem, which could result in twenty cancer fatalities from ocean transport of FRR waste alone.

During our Don't Nuke North/South Carolina Campaign we met mostly Native American residents living a stone's throw from the tracks watching the activity at the rail junction. Small homes and housing projects are close to the tracks here. Many people are unable to afford automobiles and telephones. Evacuation would be difficult or impossible. The people of Pembroke believed that the nuclear waste train endangered their community. They did not believe DOE spokesmen who claim, on the one hand, that these materials are too dangerous to be left in storage but that, on the other hand, there is no cause for concern for residents of North and South Carolina.

Our rights in a free society are threatened by the laws deemed necessary to protect these shipments. This nation cannot protect the nuclear fuel cycle from terrorism without becoming a police state. A private citizen standing on public property may view a train or truck and spread the word without jeopardy. However, if that cargo carries nuclear weapons-grade materials the citizen becomes an outlaw. The Blue Ridge Environmental Defense League plans to continue our campaign for as long as it takes to bring an end to this deadly commerce.

*If a creditor stands before a man's house all day long, demanding payment of his bill,  
the man must either remove the creditor or pay the bill. ~ Alvin Paul*

SCD29

SCD29-6

Transportation

DOE's SST/SGT system uses couriers that are armed Federal officers, an armored tractor to protect the crew from attack, and specially designed escort vehicles containing advanced communications and additional couriers. The evaluation of human health risks from transportation are addressed in the Transportation sections in Chapter 4 of Volume I and in greater detail in Appendix L. Human health impacts of the proposed facilities are discussed in the Human Health Risk sections of Chapter 4 and in greater detail in Appendix J. Nonproliferation is only one factor in the decisionmaking process for surplus plutonium disposition. Decisions on the surplus plutonium disposition program at SRS will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.



September 10, 1998

Mr. Bert Stevenson  
NEPA Compliance Officer  
Office of Fissile Materials Disposition  
U.S. Department of Energy  
P.O. Box 23786  
Washington, DC 20026-3786

Subject: Surplus Plutonium Environmental Impact Statement

Dear Mr. Stevenson:

Thank you for the opportunity to comment on the draft Surplus Plutonium Disposition Environmental Impact Statement, as published in July 1998.

The attached comments are submitted on the behalf of DUKE COGEMA STONE & WEBSTER. DUKE COGEMA STONE & WEBSTER is leading a consortium of companies which has responded to a Department of Energy request for bids to design, construct and operate a mixed oxide plant. Other members of the team are Framatome COGEMA Fuels, Nuclear Fuel Services, Duke Power and Virginia Power.

Our specific comments on the draft Surplus Plutonium Disposition Environmental Impact Statement are provided in the attachment to this letter. If you have any questions pertaining to these comments, please contact Ms. Mary Birch at (704) 382-2140.

Sincerely,

A handwritten signature of Robert H. Ihde in black ink.

Robert H. Ihde  
President and CEO  
DUKE COGEMA STONE & WEBSTER

End/ Comments on Draft EIS

U.S. DEPARTMENT OF ENERGY  
OFFICE OF FISSILE MATERIALS DISPOSITION  
WASHINGTON, DC 20545

MD177

ATTACHMENT

DUKE COGEMA STONE & WEBSTER Comments on the Department of Energy's (DOE's) Draft  
Surplus Plutonium Disposition (SPD) Environmental Impact Statement (EIS)

No.	Location	Comment
1	Executive Summary, p. S-8	<p>Specification of "can-in-canister" immobilization as a preferred alternative.</p> <p>DOE is proposing "can-in-canister" immobilization as its preferred alternative for immobilization. However, the DOE's own reports <sup>1,2</sup> indicate that "can-in-canister" immobilization does not currently meet the Spent Fuel Standard for long-term nonproliferation resistance. The United States must deploy an effective, accepted plutonium disposition technology or technologies if it wants to encourage international support for plutonium disposition. DUKE COGEMA STONE &amp; WEBSTER expects that concurrent action on the part of Russia to dispose of its surplus plutonium will be predicated on the disposition of United States material in a manner that provides high confidence in its resistance to theft, diversion, or re-use.</p> <p><b>Recommendations:</b></p> <ol style="list-style-type: none"><li>DOE should consider only those alternatives that meet the Spent Fuel Standard [i.e., mixed oxide (MOX) fuel and homogeneous immobilization] as preferred alternatives.</li><li>If the DOE pursues deployment of "can-in-canister" immobilization, the DOE should explain how it will demonstrate, in an open, objective, and peer-reviewed process, that the "can-in-canister" plutonium disposition approach will meet this fundamental program requirement - the Spent Fuel Standard.</li></ol>

<sup>1</sup> Sandia National Laboratories, SAND97-0203- Proliferation Vulnerability Red Team Report, October 1996

<sup>2</sup> U.S. Department of Energy, DOE/NN-0007- Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives, January 1997

Page 1

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MD177-1

DOE Policy

DOE acknowledges the commentor's concern regarding the ability of the immobilization approach to meet the Spent Fuel Standard. In the *Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives* (DOE/NN-0007, January 1997), DOE identified two potential liabilities of the immobilization alternatives relative to the Spent Fuel Standard. These liabilities involve ensuring sufficient radiation levels and providing removal-resistant can-in-canister designs. Since that time, DOE has modified the can support structure inside the canisters and has focused its research on the ceramic form of immobilization. As part of the form evaluation process, an independent panel of experts determined (*Letter Report of the Immobilization Technology Peer Review Panel*, from Matthew Bunn to Stephen Cochran, LLNL, August 21, 1997) that the can-in-canister design would meet the Spent Fuel Standard. In addition, NAS is currently conducting studies to confirm the ability of the ceramic can-in-canister immobilization approach to meet the Spent Fuel Standard. DOE is confident that immobilization remains a viable alternative for meeting the nonproliferation goals of the surplus plutonium disposition program.

Comment Documents and Responses—North Carolina

No.	Location	Comment
2	Executive Summary, p.8-14	<p>Quantities of plutonium considered in the EIS for disposal using the two approaches.</p> <p>The draft EIS states, "Since the ROD was issued, however, DOE has determined that an additional 9 tonnes of low plutonium content materials would require additional processing and would, therefore, be unsuitable for MOX fuel fabrication". DOE alternatives include disposing of a maximum of 33 tonnes of plutonium as MOX fuel, while the alternatives include immobilizing 50 tonnes of surplus plutonium.</p> <p>DOE has never provided justification that any surplus plutonium is not suitable for MOX use. The DOE has not explained what form this "unsuitable" plutonium is in. The technology descriptions in the draft EIS make it clear that various kinds of processing will be used in the Conversion and Immobilization Facility. Also, a wet processing step has been allowed in the DOE's MOX RFP. It would appear to be possible that some of this processing would render material that is suitable for fabrication into MOX fuel. Finally, the DOE has specified no requirements that the plutonium destined for either MOX fuel or immobilization must satisfy. Therefore, it seems very unlikely that there is any technical basis for any decision about quantities of plutonium that are suitable for either option.</p> <p><b>Recommendation:</b> Given the lack of justification for any decision about quantities of material for the two options, DOE should include the evaluation of a 100% (50 tonnes) MOX fuel alternative in the SPD EIS. This is the only way to preserve all appropriate options until the time that the DOE can make a technically defensible evaluation and decision on the allocation of material to the two plutonium disposition approaches.</p>

2

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MD177-2

Feedstock

DOE reviewed the chemical and isotopic composition of the surplus plutonium and determined in the *Storage and Disposition PEIS* ROD that about 8 t (9 tons) of surplus plutonium were not suitable for use in making MOX fuel. Furthermore, DOE has identified an additional 9 t (10 tons) for a total of 17 t (19 tons) that have such a variety of chemical and isotopic compositions that it is more reasonable to immobilize these materials and avert the processing complexity that would be added if these materials were made into MOX fuel. The criteria used in this identification included the level of impurities, processing requirements, and the ability to meet the MOX fuel specifications. Section 2.2 includes a description of the forms of plutonium that would be used for MOX feed and immobilization feed and the levels of impurities present in those materials. As discussed in this section, the plutonium destined for immobilization is mainly in the form of impure oxides, impure metals, plutonium alloys, uranium/plutonium oxide, and some alloyed reactor fuel. Impurities present include neptunium, thorium, and beryllium. None of the material planned for immobilization is in the form of spent fuel, and all of it is considered weapons usable. A further description of the types and amounts of plutonium currently planned for disposition can be found in *Feed Materials Planning Basis for Surplus Weapons-Usable Plutonium Disposition* (MD-0013, April 1997), which is available on the MD Web site at <http://www.doe-md.com>.

No.	Location	Comment	
3	Executive Summary, p. S-8, Appendix D.	<p>Fast Flux Test Facility (FFTF).</p> <p>It is not clear that using the FFTF to destroy nuclear weapons material (plutonium) would be acceptable to the international community if, at the same time, the facility was producing another kind of nuclear weapons material (tritium).</p> <p><b>Recommendation:</b> In discussing the use of the FFTF for a combined plutonium disposition and tritium production mission, DOE should acknowledge that there is a significant nonproliferation issue associated with such a course of action.</p>	3
4	Appendix D, p.D-2.	<p>Fast Flux Test Facility (FFTF).</p> <p>The appendix states "If it were determined that MOX fuel (rather than uranium-only fuel) were needed for the FFTF operations, the MOX fuel fabrication alternatives may be eliminated, depending on the amount of surplus plutonium that would be required for tritium production." however, it is our understanding that the capability to fabricate significant quantities of MOX fuel for the FFTF does not currently exist within DOE complex.</p> <p><b>Recommendation:</b> DOE should acknowledge that the use of the FFTF with plutonium fuel in this manner would require the design and construction of a MOX fuel fabrication facility for the FFTF. It is the light water reactor irradiation of MOX fuel that might be eliminated by such a course of action.</p>	4

Page 3

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MD177-3

DOE Policy

As discussed in Appendix D of the SPD Draft EIS, DOE did consider FFTF in the *Storage and Disposition PEIS*, but it was eliminated from further study because it was in a standby status and it could not satisfy the criterion of completing the disposition mission within 25 years using the historic FFTF plutonium enrichment specifications. In December 1998, the Secretary of Energy decided that FFTF would not play a role in producing tritium.

MD177-4

DOE Policy

As discussed in Section 1.7.4, Appendix D was deleted because none of the proposals to restart FFTF currently consider the use of surplus plutonium as a fuel source.



No.	Location	Comment	
5	Sections 2.17 and 2.18.	Hot cell examinations of irradiated lead assembly fuel.	
	Section 4.27.6	The environmental impacts in the draft EIS do not appear to include those impacts associated with hot cell examinations. In particular, there is no acknowledgement that the hot cell facilities would be responsible for the disposal of the spent nuclear fuel that results from destructive hot cell examinations.  Recommendation: DOE should revise the EIS to include these impacts, or note that such impacts are already included in other environmental evaluations.	5
6	Section 5.1, 5.2 and 5.4.	Preferred Alternatives. MOX Fuel Fabrication Alternatives. Lead Assembly Fabrication.  Numerous times the number of lead assemblies referred to is 10. Based on scope and schedule for a lead assembly program it would be very unlikely that this number of full MOX lead assemblies could be fabricated.  Recommendation: If this is a bounding number of lead assemblies used for EIS basis, then it should be stated as such. It is misleading to indicate that 10 lead assemblies could be successfully fabricated based on our knowledge (or is there some information that we are not aware that established this number).	6

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MD177-5

Lead Assemblies

The two DOE sites, ANL-W and ORNL, proposed for postirradiation examination conduct these types of activities on an ongoing basis. Impacts for activities associated with the postirradiation examination of lead assemblies are within the scope of existing NEPA documentation at these sites and are discussed, for limited resource areas, in Section 4.27.6. Spent fuel after postirradiation examination would be the responsibility of the DOE spent nuclear fuel program. As stated in the ROD for the *DOE Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final EIS* (DOE/EIS-0203-F, April 1995), interim storage for this type of spent fuel would take place at INEEL before eventual disposal in a geologic repository. As described in the revised Section 1.6, the preferred alternative for postirradiation examination is ORNL.

MD177-6

Lead Assemblies

The SPD Draft EIS assumed up to 10 lead assemblies as a bounding analysis based on DOE's extensive discussions with representatives from the commercial fuel industry. This SPD EIS was revised to evaluate two lead assemblies based on information from DCS, the team that was selected to provide MOX fuel fabrication and irradiation services, although it is possible that more than two would be required.

No.	Location	Comment	
7	Section 5.1	Preferred Alternatives.  DOE does not, at this time, have a preference for the location where lead assemblies for MOX fuel qualification would be fabricated.  <i>Recommendation:</i> The decision should be left up to the contractor where lead assembly fabrication will take place based on their technical evaluation at the preferred locations cited by DOE.	7
8	Section 5.2	MOX Fuel Fabrication Alternatives.  Environmental critique that will be prepared, will it be available to Contractor for review prior to the issuance and basis for environmental synopsis?  <i>Recommendation:</i> Contractor should be able to review for accuracy and completeness prior to issuance.	8
9	General	SPD EIS Contractor	
	Appendix B	The SPD EIS includes a Appendix B - Contractor Nondisclosure Statement. In this appendix there is a signed statement that the contractor has no financial interest in the outcome of the project. Given the nature of the statement, it would more appropriately be called a disclosure (vs. nondisclosure) statement. Also, the identity of the SPD EIS support contractor does not appear to be provided anywhere in the SPD EIS, including Appendix B.  <i>Recommendations:</i> 1. Rename Appendix B "Contractor Disclosure Statement." 2. Identify the support contractor in Appendix B and in the cover section of the SPD EIS.	9

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MD177

MD177-7

Lead Assemblies

As discussed in the revised Section 1.6, based on consideration of capabilities of the candidate sites and input from DCS on the MOX approach, DOE prefers LANL for lead assembly fabrication. LANL is preferred because it already has fuel fabrication facilities that would not require major modifications, and takes advantage of existing infrastructure and staff expertise. Additionally, the surplus plutonium dioxide that would be used to fabricate the lead assemblies would already be in inventory at the site. Section 2.17.2 describes the lead assembly fabrication siting alternatives, and Section 4.27 discusses the potential impacts of lead assembly activities. Decisions on lead assembly fabrication will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

MD177-8

MOXRFP

The Environmental Synopsis is a nonproprietary, publicly available summary of the Environmental Critique, which is an internal DOE procurement document subject to confidentiality requirements. Procurement analyses are not subject to review and approval by offerors.

MD177-9

General SPD EIS and NEPA Process

Per the commentor's recommendation, the title of Appendix B is now "Contractor Disclosure Statement," and the name of the contractor, Science Applications International Corporation, appears on the revised form.

DUKE POWER COMPANY  
K. S. CANADY  
PAGE 1 OF 6



Duke Power Company  
A Duke Energy Company  
Energy Center  
Rt. 1, Box 1006  
Charlotte, NC 28201-1006

September 8, 1998

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

Subject: Surplus Plutonium Disposition Environmental Impact Statement

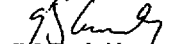
Dear Sir or Madam:

- Thank you for the opportunity to comment on the draft Surplus Plutonium Disposition Environmental Impact Statement, as published in July 1998.

The attached comments are submitted on the behalf of Duke Power, a division of Duke Energy Corporation. Duke Power has proposed to provide four mission reactors for the disposition of surplus weapons plutonium as part of the DUKE COGEMA STONE & WEBSTER Team. The team members are Duke Engineering & Services; COGEMA; Stone & Webster; Framatome Cogema Fuels; Nuclear Fuel Services; and Virginia Power.

Duke Power's specific comments on the draft Surplus Plutonium Disposition Environmental Impact Statement are provided in the attachment to this letter. If you have any questions pertaining to these comments, please contact Mr. Steven Nesbit at (704) 382-2197.

Sincerely,

  
K.S. Canady, Manager  
Nuclear Engineering - NGD  
Duke Power Company

Attachment

SPN

MD165

ATTACHMENT

Duke Power Comments on the Department of Energy's (DOE's) Draft  
Surplus Plutonium Disposition (SPD) Environmental Impact Statement (EIS)

No. Location Comment

- |   |                           |   |
|---|---------------------------|---|
| 1 | Executive Summary, p. S-8 | <p>Specification of "can-in-canister" immobilization as a preferred alternative.</p> <p>DOE is proposing "can-in-canister" immobilization as its preferred alternative for immobilization. However, the DOE's own reports<sup>1,2</sup> indicate that "can-in-canister" immobilization does not currently meet the Spent Fuel Standard for long-term nonproliferation resistance. The United States must deploy an effective, accepted plutonium disposition technology or technologies if it wants to encourage international support for plutonium disposition. Duke expects that concurrent action on the part of Russia to dispose of its surplus plutonium will be predicated on the disposition of United States material in a manner that provides high confidence in its resistance to theft, diversion, or re-use.</p> <p><b>Recommendations:</b></p> <ol style="list-style-type: none"><li>1. DOE should consider only those alternatives that meet the Spent Fuel Standard [i.e., mixed oxide (MOX) fuel and homogeneous immobilization] as preferred alternatives.</li><li>2. If DOE pursues deployment of "can-in-canisters" immobilization, DOE should explain how it will demonstrate, in an open, objective, and peer-reviewed process, that the "can-in-canister" plutonium disposition approach will meet this fundamental program requirement - the Spent Fuel Standard.</li></ol> |
|---|---------------------------|---|

1

<sup>1</sup> Sandia National Laboratories, SAND97-8203 - Proliferation Vulnerability Red Team Report, October 1996.

<sup>2</sup> U. S. Department of Energy, DOE/NN-0007 - Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives, January 1997.

MD165

MD165-1

DOE Policy

DOE acknowledges the commentator's concern regarding the ability of the immobilization approach to meet the Spent Fuel Standard. In the *Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives* (DOE/NN-0007, January 1997), DOE identified two potential liabilities of the immobilization alternatives relative to the Spent Fuel Standard. These liabilities involve ensuring sufficient radiation levels and providing removal-resistant can-in-canister designs. Since that time, DOE has modified the can support structure inside the canisters and has focused its research on the ceramic form of immobilization. As part of the form evaluation process, an independent panel of experts determined (*Letter Report of the Immobilization Technology Peer Review Panel*, from Matthew Bunn to Stephen Cochran, LLNL, August 21, 1997) that the can-in-canister design would meet the Spent Fuel Standard. In addition, NAS is currently conducting studies to confirm the ability of the ceramic can-in-canister immobilization approach to meet the Spent Fuel Standard. DOE is confident that immobilization remains a viable alternative for meeting the nonproliferation goals of the surplus plutonium disposition program.

No.	Location	Comment
2	Executive Summary p. S-14.	<p>Quantities of plutonium considered in the EIS for disposal using the two approaches.</p> <p>The draft EIS states, "Since the ROD was issued, however, DOE has determined that an additional 9 tonnes of low plutonium content materials would require additional processing and would, therefore, be unsuitable for MOX fuel fabrication." DOE alternatives include disposing of a maximum of 33 tonnes of plutonium as MOX fuel, while the alternatives include immobilizing 50 tonnes of surplus plutonium.</p> <p>DOE has never provided justification that any surplus plutonium is not suitable for MOX use. The DOE has not explained what form this "unsuitable" plutonium is in. The technology descriptions in the draft EIS make it clear that various kinds of processing will be used in the Conversion and Immobilization Facility. It would appear to be possible that some of this processing would render material that is suitable for fabrication into MOX fuel. In addition, if a plutonium polishing step is included in the MOX fuel program, such a step may make more of the formerly "unsuitable" plutonium amenable for fabrication into MOX fuel. Finally, the DOE has specified no requirements that the plutonium destined for either MOX fuel or immobilization must satisfy. Therefore, it seems very unlikely that there is any technical basis for any decision about quantities of plutonium that are suitable or unsuitable for either option.</p> <p><b>Recommendation:</b> Given the lack of justification for any decision about quantities of material for the two options, DOE should include the evaluation of a 100% (50 tonne) MOX fuel alternative in the SPD EIS. This is the only way to preserve all appropriate options until the time that the DOE can make a technically defensible evaluation and decision on the allocation of material to the two plutonium disposition approaches.</p>

2

MD165

MD165-2

Feedstock

DOE reviewed the chemical and isotopic composition of the surplus plutonium and determined in the *Storage and Disposition PEIS* ROD that about 8 t (9 tons) of surplus plutonium were not suitable for use in making MOX fuel. Furthermore, DOE has identified an additional 9 t (10 tons) for a total of 17 t (19 tons) that have such a variety of chemical and isotopic compositions that it is more reasonable to immobilize these materials and avert the processing complexity that would be added if these materials were made into MOX fuel. The criteria used in this identification included the level of impurities, processing requirements, and the ability to meet the MOX fuel specifications. Section 2.2 includes a description of the forms of plutonium that would be used for MOX feed and immobilization feed, and the levels of impurities present in those materials. As discussed in this section, the plutonium destined for immobilization is mainly in the form of impure oxides, impure metals, plutonium alloys, uranium/plutonium oxide, and some alloyed reactor fuel. Impurities present include neptunium, thorium, and beryllium. None of the material planned for immobilization is in the form of spent fuel, and all of it is considered weapons usable. A further description of the types and amounts of plutonium currently planned for disposition can be found in *Feed Materials Planning Basis for Surplus Weapons-Usable Plutonium Disposition* (MD-0013, April 1997), which is available on the MD Web site at <http://www.doe-md.com>.

No.	Location	Comment	
3	Executive Summary, p. S-8. Appendix D.	<b>Fast Flux Test Facility (FFTF).</b>  It is not clear that using the FFTF to destroy nuclear weapons material (plutonium) would be acceptable to the international community if, at the same time, the facility was producing another kind of nuclear weapons material (tritium).  <i>Recommendation:</i> In discussing the use of the FFTF for a combined plutonium disposition and tritium production mission, DOE should acknowledge that there is a significant nonproliferation issue associated with such a course of action.	3
4	Appendix D, p. D-2.	<b>Fast Flux Test Facility (FFTF).</b>  The appendix states "If it were determined that MOX fuel (rather than uranium-only fuel) were needed for the FFTF operations, the MOX fuel fabrication alternatives may be eliminated, depending on the amount of surplus plutonium that would be required for tritium production." However, it is our understanding that the capability to fabricate significant quantities of MOX fuel for the FFTF does not currently exist within the DOE complex.  <i>Recommendation:</i> DOE should acknowledge that use of the FFTF with plutonium fuel in this manner would require the design and construction of a MOX fuel fabrication facility for the FFTF fuel. It is the light water reactor irradiation of MOX fuel, not MOX fuel fabrication, that might be eliminated by such a course of action.	4

3

MD165

MD165-3

DOE Policy

As discussed in Appendix D of the SPD Draft EIS, DOE did consider FFTF in the *Storage and Disposition PEIS*, but it was eliminated from further study because it was in a standby status and it could not satisfy the criterion of completing the disposition mission within 25 years using the historic FFTF plutonium enrichment specifications. In December 1998, the Secretary of Energy decided that FFTF would not play a role in producing tritium.

MD165-4

DOE Policy

As discussed in Section 1.7.4, Appendix D was deleted because none of the proposals to restart FFTF currently consider the use of surplus plutonium as a fuel source.

No.	Location	Comment	
5	Sections 2.17 and 2.18.	Hot cell examinations of irradiated lead assembly fuel.	5
	Section 4.27.6.	The environmental impacts in the draft EIS do not appear to include those impacts associated with hot cell examinations. In particular, there is no acknowledgment that the hot cell facilities would be responsible for the disposal of the spent nuclear fuel that results from destructive hot cell examinations.  <i>Recommendation:</i> DOE should revise the EIS to include these impacts, or note that such impacts are already included in other environmental evaluations.	
6	Executive Summary, p. S-27.	Spent Nuclear Fuel.	6
	Section 4.28.	The <i>Storage and Disposition EIS</i> and the draft SPD EIS overstate the impact of MOX fuel with respect to generating additional quantities of spent nuclear fuel. The assumption of minimum burnup (20,000 MWd/MTU) on MOX fuel is uneconomical and therefore inconsistent with the MOX fuel program that DOE has outlined through its Request for Proposal for MOX Fuel Fabrication and Irradiation Services. Additional quantities of spent fuel generated as a result of MOX fuel use should be very small.  <i>Recommendation:</i> DOE should revise the EIS to more accurately reflect these MOX fuel impacts.	

4

MD165

MD165-5

Lead Assemblies

The two DOE sites, ANL-W and ORNL, proposed for postirradiation examination conduct these types of activities on an ongoing basis. Impacts for activities associated with the postirradiation examination of lead assemblies are within the scope of existing NEPA documentation at these sites and are discussed, for limited resource areas, in Section 4.27.6. Spent fuel after postirradiation examination would be the responsibility of the DOE spent nuclear fuel program. As stated in the ROD for the *DOE Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final EIS* (DOE/EIS-0203-F, April 1995), interim storage for this type of spent fuel would take place at INEEL before eventual disposal in a geologic repository. As described in the revised Section 1.6, the preferred alternative for postirradiation examination is ORNL.

MD165-6

MOX Approach

DOE evaluated technical and environmental information provided during the procurement process to acquire MOX fuel fabrication and irradiation services and revised Section 4.28 accordingly.

No.	Location	Comment
7	General	SPD EIS Contractor.
	Appendix B	The SPD EIS includes a Appendix B - Contractor Nondisclosure Statement. In this appendix there is a signed statement that the contractor has no financial interest in the outcome of the project. Given the nature of the statement, it would more appropriately be called a disclosure (vs. nondisclosure) statement. Also, the identity of the SPD EIS support contractor does not appear to be provided anywhere in the SPD EIS, including Appendix B.  <i>Recommendations:</i> 1. Rename Appendix B "Contractor Disclosure Statement." 2. Identify the support contractor in Appendix B and in the cover section of the SPD EIS.

MD165-7

General SPD EIS and NEPA Process

Per the commentor's recommendation, the title of Appendix B is now "Contractor Disclosure Statement," and the name of the contractor, Science Applications International Corporation, appears on the revised form.



Lisa Hamill  
Box 392  
Carboro, NC 27510

Re: a sixty day extension of comment period

August 11, 1998  
via facsimile # 800-820-5156  
Office of Fissile Materials Management  
U.S. Department of Energy  
PO Box 23786  
Washington, D.C. 20026-3786

Dear Sir or Madam:

I write to request both a sixty-day extension of the public comment period and additional public hearings in North Carolina on the Draft Surplus Plutonium Disposition Environmental Impact Statement. I write also to support requests by other citizens' groups and individuals for additional public hearings in affected communities. The SPDEIS is the latest National Environmental Policy Act document that will help shape decisions on how to dispose of up to fifty metric tons of weapons usable plutonium that has been declared surplus to national security needs. Full public debate must occur now.

**Extend the Public Comment Period for Sixty Days**

The Department of Energy is allowing for a sixty-day comment period for people to review and provide comments on a large, complex document that references twenty-eight other related NEPA documents, an economic report that not released until July 28, 1998, and numerous Data Reports. The Data Reports are unavailable to people who are not near a Department of Energy Reading Room, yet contain crucial information. For example, on page J-4 of the Draft SPDEIS, DOE wrote that, "source term data for radiological releases, stack heights, and release locations are provided in the Data Reports for the pit conversion, immobilization, and MOX facilities." In other words, the Draft SPDEIS does not contain any data on something as basic as expected quantities of radioactive air pollutants.

**Provide for Additional Public Hearings**

The Department of Energy is planning only five public hearings, four in the communities closest to DOE sites being considered for new plutonium processing plants, and one regional meeting in a downstream community (Portland). This public hearings schedule will likely dilute the diversity of public comments; inhibit the involvement of downwind and downstream communities that generally bear liabilities without benefits; and skew the public opinion curve in favor of DOE proposals.

DOE should add the following hearings to its list:

1. Regional Hearings in Savannah, Georgia and Columbia, South Carolina. The Savannah River Site is the preferred candidate site for all three new plutonium processing facilities. Real impacts on the Savannah River from SRS operations and accidents are well documented, with the most notable being the December, 1991 tritium leak that quickly reached Savannah, Georgia. DOE cannot justify a lack of public hearings in Savannah or Columbia, which will bear the greatest

FD224

**FD224-1**

**General SPD EIS and NEPA Process**

DOE believes that the comment period allowed sufficient time for public review of the SPD Draft EIS. Although it did not extend the comment period, DOE did consider all comments received after the close of that period. All comments were given equal consideration and responded to.

DOE's descriptions of the affected environment and the potential environmental impacts in this SPD EIS are in accordance with 40 CFR 1502.15 and 40 CFR 1502.16. These descriptions are no longer than necessary for an understanding of the effects of the alternatives, and the analyses and data are commensurate with the significance of the impact, the less-important information being consolidated, summarized, or referenced. Resources such as the data reports are available in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

**FD224-2**

**General SPD EIS and NEPA Process**

It was not possible to hold hearings in all areas of the country; therefore, the hearings were restricted to locations where the greatest impacts of the proposed surplus plutonium disposition facilities could be expected. DOE did, however, provide various other means for public comment on this SPD EIS: mail, a toll-free telephone and fax line, and the MD Web site. During preparation of the *Storage and Disposition PEIS*, regional hearings were held in locations such as Boston, Chicago, San Francisco, and Denver. Denver was included because the PEIS dealt with the removal of materials from RFETS. DOE made, and is honoring, a commitment to get all plutonium out of RFETS. Additional hearings in Denver were not held because the proposed surplus plutonium disposition facilities would not be sited in the area. Shipment of MOX fuel to Canada for testing is under consideration as part of a separate EA, and is beyond the scope of this EIS. The *Environmental Assessment for the Parallel Project Fuel Manufacture and Shipment* (DOE/EA-1216, January 1999) and FONSI (August 1999) can be viewed on the MD Web site at <http://www.doe-md.com>.

liability from its proposals.	2
2. Regional hearings in communities near nuclear reactor sites that are being proposed for irradiation of Mixed Oxide (MOX) fuel. Consortiums of utilities and nuclear fuel fabricators are scheduled to submit Proposals for MOX Fuel Fabrication and Irradiation Services August 1998. We request that a public hearing be held in Raleigh and Charlotte, North Carolina, where reactor communities and the affected public are located.	
DOE has stated that "environmental impact analysis relating to specific reactors will be included in the SPD Final EIS," although these analyses are scheduled to be made by Consortiums in their Proposals. During the 1997 Scoping for the SPDEIS, DOE was repeatedly asked to involve nuclear reactor communities in the NEPA process, yet ignored these comments while moving forward on a process to select reactor sites that excludes community input. DOE cannot justify soliciting public comment for the site selection process for plutonium processing facilities, while excluding public involvement in selecting plutonium irradiation facilities.	3
3. A regional hearing in Denver, Colorado. Denver is in proximity to Rocky Flats where approximately 25% of the surplus plutonium is in storage, so the area has a stake in the decisions being made. Furthermore, DOE has never held hearings to discuss plutonium immobilization of Rocky Flats plutonium as a reasonable alternative, and is proposing to weaken the requirements for shipping plutonium from Rocky Flats to Savannah River Site.	
4. A regional hearing in Dallas, Texas. Dallas is likely to be in the transportation corridor for shipments of special nuclear materials and radioactive waste from new operations. The Department of Energy cannot legitimately claim that state-wide support exists in Texas for Pantex becoming a new DOE plutonium processing site without seeking input from outside the Amarillo area.	2
5. A hearing in Washington D.C., where decisions are made, policy is formulated, and a substantial community of non-governmental organizations exists to monitor the Department of Energy, and where a larger community of organizations exists to monitor how taxpayer dollars are spent.	
6. Port Huron, Michigan (or other location), the location of the border crossing for plutonium fuel shipments to Chalk River, Ontario to test in CANDU reactors. DOE is still considering the option of burning MOX fuel in CANDU reactors, yet has effectively excluded Canadian citizens from the process. The hearing could be a cooperative public event held with the Atomic Energy of Canada, Ltd.	
The abundant uncertainties and recent changes in direction in the Department of Energy's hazardous plutonium disposition program indicates a continued need to subject Federal proposals to the highest and most rigorous levels of public debate possible. DOE has already failed to implement the easiest part of its plutonium storage and disposition program. At Pantex it has abandoned its new "safer" container and a proposed facility upgrade for plutonium pit storage. For Rocky Flats plutonium, it is already amending the "Record of Decision" for the "Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement" to "address the environmental impact of utilizing the K-Reactor facility for plutonium storage, the possibility that plutonium stabilization would be done at SRS instead of at RFETS, the shipment of plutonium to SRS before the AFSF storage vault is operational, the shipment of some materials from RFETS that are less than 50% plutonium, and the need to utilize direct metal casting in FB-Line to de-classify some of the RFETS." (Defense Nuclear Facilities Safety	4 5 6
FD224	

DOE actively sought public comments on the SPD Draft EIS and distributed approximately 1,700 copies of the document to all interested parties. All comments, regardless of how they were submitted, were given equal consideration and responded to.

FD224-3 General SPD EIS and NEPA Process

Regional public hearings on the nuclear reactor sites proposed for the irradiation of MOX fuel could not be conducted during the public comment period for the SPD Draft EIS, as no sites had been designated by that time. The SPD Final EIS was not issued until specific reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999.

FD224-4 General SPD EIS and NEPA Process

Since the inception of the fissile materials disposition program, DOE has supported a vigorous public participation policy. It has conducted public hearings in excess of the minimum required by NEPA regulations to engender a high level of public dialogue on the program. The office has also provided the public with substantial information in the form of fact sheets, reports, exhibits, visual aids, and videos related to fissile materials disposition issues. It hosts frequent workshops, and senior staff members make presentations to local and national civic and social organizations on request. Additionally, various means of communication—mail, a toll-free telephone and fax line, and a Web site (<http://www.doe-md.com>)—have been provided to facilitate the public dialogue. It is DOE policy to encourage public input into these matters of national and international importance.

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*Lisa Hamill*

**Lisa Hamill**

FD224

## Storage and Disposition PEIS and ROD

## Storage and Disposition PEIS and ROD

DOE conducted a supplement analysis for the early movement to and storage of the RFETS surplus plutonium in Building 105-K after modifications to enable safe, secure plutonium storage. Based on this analysis, DOE issued the amended ROD, referenced by the commentor, in the Federal Register (63 FR 43392) on August 13, 1998, in fulfillment of the letter and spirit of NEPA (40 CFR 1506.6(b)). The decision is contingent on a decision under this SPD EIS to locate an immobilization facility at SRS. A copy of the amended ROD and the supplement analysis is available in the DOE reading rooms and on the MD Web site at <http://www.doe-md.com>.

Howard R. Canter, Acting Director  
U.S. Department of Energy  
Office of Fissile Materials  
P.O. Box 23786  
Washington, D.C. 20026-3786

September 16, 1998

Re: SUPPLEMENT TO COMMENTS SUBMITTED DURING PUBLIC COMMENT PERIOD.  
SURPLUS PLUTONIUM DRAFT ENVIRONMENTAL IMPACT STATEMENT, SPD EIS

Dear Director Canter:

Please include the following correspondence, submitted by facsimile transmission, as part of the official record of proceedings in the above referenced public comment period. The information discussed herein was not available to me as of 9/15/98, and therefore, could not be included in comments of 9/15/98.

United States Enrichment Corporation was created under congressional mandate of Energy Policy Act of 1992. In February of 1994 DOE published notice to the public in the Federal Register, USING A FINDING OF NO SIGNIFICANT IMPACT (FONSI), that The Nuclear Regulatory Commission (NRC) would assume watch dog status of both the Portsmouth Gaseous Diffusion Plant and the Paducah Gaseous Diffusion Plant due to transfer from public ownership (under DOE) to private/commercial operations (under NRC). I submitted comments objecting to agency intent which included objection to the agency's use of a FONSI: finding of fact of no significant impact! The rationale, I was later informed, was that environmental, health and safety impacts, and risks to the general public would be the same conditions as previously existed under DOE oversight and management.

As stated in correspondence of 9/15/98 to the agency, DOE is prolific in production of documents, holding public information meetings, and making documents, upon request, available to interested members of the public. DOE maintains an information center in close proximity to the Portsmouth Gaseous Diffusion Plant. NRC has no such public involvement and public information process. NRC, in fact, refused to accept comments from me, personally, which pertained to the Portsmouth Gaseous Diffusion Plant BECAUSE I HAD NO STATUS. ACCORDING TO NRC DETERMINATION, AS A DIRECTLY AFFECTED PARTY!! It is noteworthy herein that NRC has since "modified" its public comment periods on nuclear power plants TO ALLOW COMMENTS FROM ONLY DIRECTLY AFFECTED PARTIES which NRC interprets to be groups and/or individuals who live in proximity of the individual nuclear power plants and who can demonstrate their status as directly affected parties in NRC proceedings. Contrary to Administrative Procedure Act (which states, among other things, that any citizen, taxpayer, and/or interested party MAY SUBMIT COMMENT AND PARTICIPATE in proceedings.) to the best of my knowledge, NRC has continued to preclude parties from proceedings if NRC determines these parties to lack status as defined by NRC.

NRC APPARENTLY ALSO DETERMINES WHAT IS AND OF EQUAL IMPORTANCE, WHAT IS NOT DISCUSSED/REVEALED TO THE PUBLIC AT SEMI-ANNUAL PUBLIC INFORMATION SESSIONS HELD TO DISCUSS TROUBLED NUCLEAR PLANTS!!! NRC failed to include

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MD280

MD280-1

General SPD EIS and NEPA Process

DOE acknowledges the commentor's remarks concerning policies of NRC. However, DOE has no authority in matters pertaining to policies and practices of NRC.

DOE acknowledges the commentor's remarks concerning operations at Portsmouth and Paducah. As described in Section 1.5, DOE may elect to use depleted uranium hexafluoride stored at these gaseous diffusion plants to produce the uranium dioxide that would serve as feed material during fabrication of MOX fuel and for the ceramic immobilization process. Approximately 0.04 percent (145 t [160 tons]) of DOE's current inventory of depleted uranium hexafluoride would be used annually for this purpose. Environmental analyses supporting this SPD EIS used Portsmouth as a representative source for depleted uranium hexafluoride. As discussed in Chapter 4 of Volume I, no major environmental effects would result from the use of depleted uranium hexafluoride in the production of uranium dioxide.

USEC was created by Congressional mandate under Title IX of the Energy Policy Act of 1992. As described in Section 1202, USEC was created for several purposes, one of which is to maximize the long-term value of USEC to the Treasury of the United States. There is no conspiracy involving DOE to misuse public funds in the matter of USEC or any other matter.

DOE acknowledges the commentor's remarks concerning the requirement for environmental impact statements at Portsmouth and Paducah. As discussed in Section 1.8.1, environmental conditions at Portsmouth and Paducah are described in the *Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE/EIS-0269 April 1999).

discussion of safety concerns at both the Portsmouth and Paducah Plants "to avoid embarrassment on the day after the plants were sold to the public."  
ATTACHMENT I.

To clarify: both plants were public property (government ownership) until they were transferred to USEC beginning in 1994 (privatization), and then, in 1998 USEC offered stock in both the plants for sale to private investors in public offering!! The "transfer" of government/public property to USEC was estimated to be \$1.4 BILLION DOLLARS in property and technology. It is most interesting that NRC FAILED TO INCLUDE WHAT THE COMMISSION KNEW TO BE "PROBLEMS" at the Ports and Paducah Plants in semi-annual "information" session held by NRC the day after public stock offering. It is also most interesting that private investors bought what the American taxpayers already owned and had paid for resulting from the "privatization" process!! The term "complicity" as referenced in comments of 9/15/98 certainly seems to apply to this wheeling and dealing with public funds by DOE/USEC/NRC.

In further "complicity," DOE failed to require an Environmental Impact Statement which fully addressed environmental problems PRIOR TO TRANSFER TO USEC at the Portsmouth and Paducah Gaseous Diffusion Plants during the "privatization process." Likewise, NRC has failed to reveal/disclose known problems to both the public, and the private investors who purchased stock in the plants only one day prior to NRC's semi-annual "information" session!  
See ATTACHMENT II, paragraph 7. Note that safety concerns not disclosed by NRC included potential risks/damage from earthquake at one plant and potential risk of "unintended" nuclear chain reaction from storage of too much uranium in one place!

An interested party, citizen, and/or taxpayer might well ask what agency, if any, is protecting the public health, safety, and property in the process being practiced at these uranium plants?!? From personal experience, kill-the-messenger is descriptive of the response to my questions regarding the operational safety, environmental legacy, risks to the public and workers, and "wisdom" of 1.4 Billion dollar taxpayer gifts to private interests from multiple agencies! The goals of "SHOOT-AT-THE-CORPSE"-  
1) silencing others on the scene from revealing the real perpetrators- and 2) making guilt dispensable- appear to be pertinent issues for comment.

In conclusion, I would respectfully remind the agency that DOE is mandated by various federal laws, other than Energy Policy Act of 1992, which require the agency to represent the best long term interests of the public and the nation.

Respectfully submitted,

*Diana I. Cahall*  
Diana I. Cahall (Note: formerly known as Diana Salisbury)  
7019 Ashridge Arnheim Road  
Sardinia, Ohio 45171 (937) 446-2763

Attachment  
(via telecopier transmission to 1-800-820-5156,  
on 9/16/98, and by, The U.S. Postal Service, regular  
mail, postage prepaid on 9/16/98.

THE CONSENT ENQUIRY

7/16/98 PJH

## Secrecy by NRC on plants faulted

BY MATTHEW L. WALD  
The New York Times

WASHINGTON — The Nuclear Regulatory Commission (NRC) has kept quiet about its findings that two nuclear power plants had processing plants in order to avoid embarrassment on the day after the plants were added to the public, a nuclear watchdog group said today.

Documents obtained by the group, the Union of Concerned Scientists (UCS), show that the NRC, which oversees civilian nuclear power plants, had Energy Department plants had how well one plant would withstand a nuclear accident. The documents also contain a list of uranium processing plants to prevent the storage of too much uranium in one place, which could cause an uncontrolled nuclear reaction, essentially a small explosion.

The plants, in Portsmouth, Ohio, and Paducah, Ky., which were built by the federal government, were transferred to private ownership in 1982. The Energy Department plants had been added in an initial public hearing the summer after the Chernobyl disaster, when they were found to have problems.

The U.S. Environment

Corp. The management team that ran the two plants before the transfer now runs the corporate

The NRC held one of its twice-a-year public sessions to discuss troubled nuclear plants the day after the sale was completed but did not discuss the

problems. "Investors are supposed to make their own decisions, what they're comfortable with," said David Lochman, a nuclear industry spokesman in Washington. "We can only do that when they have a clear idea of the risks."

NRC spokesman William Weaver said the commission had not found any of the problems from previous re-

Attachment I

MD280

Howard R. Canter, Acting Director  
U.S. Department of Energy  
Office of Fissile Materials  
P.O. Box 23786  
Washington, D.C. 20026-3786

September 15, 1998

Re: PUBLIC COMMENT, SURPLUS PLUTONIUM ENVIRONMENTAL IMPACT STATEMENT  
(SPD EIS)

Dear Director Canter:

Please include this correspondence as part of the agency's official record of proceedings in the above referenced matter.

Due to considerable demands upon both my time and energy from other matters, I am submitting what I consider to be comments that address the crucial issues in the agency's SPD EIS generally rather than specifically.

The agency obviously must take responsibility for doing something, i.e., inaction is not a reasonable alternative in the "solution" to plutonium disposition. DOE has produced prolific information for public comment on the agency's proposed actions. This comment is NOT intended as criticism of the agency's SPD EIS. Rather, DOE is providing information necessary for "informed" public participation and, for that, deserves to be commended.

SPD Draft EIS makes numerous references to technology in the development or yet-to-be-developed/available stages. The public cannot make comment on the "wisdom" or appropriateness of technology not known to the public. Although, DOE appears to have knowledge of technology that is so-to-speak coming down the road. Likewise, DOE makes multiple references in Draft SPD EIS to commercial facilities, especially commercial facilities for Hazardous Waste treatment, storage, and disposal. The agency appears to be strongly leaning toward incinerator/reduction to ash as one such commercial facility/"solution".

DOE does, in fact, acknowledge that agency actions in plutonium disposition will result in multiple other actions which will occur directly and indirectly as consequences of DOE decision-making. DOE is, in fact and law, required to fully address these impacts/consequences in draft EIS. Transfer of materials to commercial facilities does not relieve DOE of NEPA mandate and/or agency responsibility to the public, numerous affected and to-be-affected communities, the environment, and the nation's safety and security. DOE has, in fact, co-operated with multiple federal, state, and local agencies, and proposed in draft EIS to continue this considerable "co-operation." Translated into simple terms members of the public can comprehend, DOE has historically SHARED THE PUBLIC'S FUNDS WITH OTHER AGENCIES IN PLANNING, CONSTRUCTING, AND OPERATING FACILITIES (implementing "solutions") such as the ones described in draft EIS.

-1-

MD192

#### MD192-1

#### General SPD EIS and NEPA Process

DOE acknowledges the commentor's support for DOE's public outreach and providing information necessary for informed public participation. In Sections 2.5 and 4.2, the No Action Alternative and its environmental impacts is described as required by 40 CFR 1502.14. This description makes clear to the public and decisionmakers the environmental impacts of taking no action rather than implementing the proposed action.

#### MD192-2

#### General SPD EIS and NEPA Process

The methods DOE proposes to use for surplus plutonium disposition are based on proven and well-understood technologies. Technological work cited in this SPD EIS is work required to adapt those technologies to the disposition of surplus plutonium and the engineering studies required to design the disposition facilities to meet specific program needs. Basic science or proof of principal scientific work is required to implement the surplus plutonium disposition program.

Hazardous waste management is discussed in Hazardous Waste sections in Chapter 4 of Volume I and Section 1.8.2. DOE plans to handle hazardous waste generated as a result of the surplus plutonium disposition program in accordance with the decisions made on the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F, May 1997). The decision on hazardous waste, excluding wastewater, was to continue to use off-site facilities for treatment at all sites except ORR and SRS, where a combination of off-site and existing on-site facilities may be used.

#### MD192-3

#### General SPD EIS and NEPA Process

The term "cooperating agency" in this EIS has a narrower sense than that used by the commentor. DOE's use of the term is in accordance with the definition stipulated in 40 CFR 1501.5: another Federal agency that has jurisdiction by law and/or has special expertise with respect to any environmental issue.

Co-operating local, state, and federal agencies are too numerous to mention in brief comments. However, implementation requires considerable funding to and distributed by Departments of Transportation (local, state, and federal) for highway infrastructure projects. HUD requires funding (for distribution) to build housing required during facility construction phase, etc. Furthermore, numerous state and local agencies have "re-aligned" and "re-organized" in the process of implementing "solutions". Recycling and waste reduction funding appears to be most abundant for distribution in Ohio. The Brown County (Ohio) Board of Commissioners are the grantees of a recycling grant received by the Highland County (Ohio) Board of Commissioners (making the Highland County Board grantees of funds and grantors to the Brown County Board of Commissioners)!!! Obviously, the Brown County Board of Commissioners as grantees will not directly implement the recycling grant; it is to be passed through (granted again) to Adams/Brown Recycling, Inc., a not-for-profit! I have noted to the Brown County Board of Commissioners that Ohio Revised Code, Section 1702 prohibits the Board from acting as a conduit for state or federal funds in Civil Case No. 970242, Brown County Court of Common Pleas, and again, in Administrative Petition of 8/14/98. As of the date of this correspondence, I have received no response from the Board of Commissioners to 8/14/98 Administrative Petition.

DOE may, but should not, consider previous paragraph as distraction/off-the-point in DOE decision-making issue(s). Brierly stated, the multitude of agencies, governmental units, not-for-profits, quasi-governmental agencies, and private/public partnerships ARE ALL COOPERATING AGENCIES AND STAKEHOLDERS IN FUNDING DISTRIBUTION(S)! LIKEWISE, THEY ARE CO-OPERATORS IN DECISION-MAKING AND IMPLEMENTING. The public has, figuratively speaking, considerable difficulty in getting a foot-in-the-door in the decision-making process with so many insiders already huddled inside and poised to spring into various related action(s)!

In conclusion, I am quoting from Georgie Anne Geyer's editorial comment in today's CINCINNATI ENQUIRER:

Where I came from, on the South Side of Chicago, complicity meant more than simply involving others or being involved oneself - in an act, innocent, criminal, or in-between. It denoted the old Mafia idea of having everybody 'shoot at the corpse' so 1) nobody would talk about the real perpetrator of a crime and 2) guilt was dispensable. ATTACHMENT I, "The Quintessential Con Man"

The subject of Ms. Geyer's editorial is the American president, however, the substance of her observations are focused upon the shaping of public policy, and the considerable art of politics involved in making so many guilty of 'complicity' in following-the-leader. DOE is, in fact and practice, participating in 'shoot-at-the-corpse' decision-making with considerable federal (taxpayer) dollars involved in the process! The public deserves public hearings and decision-making process with considerably more access and much less complicity.

-2-

MD192



Thank you for opportunity to comment on draft SPD EIS and for agency policy which allows for distribution of information allowing (somewhat) informed comment.

3

Respectfully submitted,

*Diana I. Cahall*  
Diana I. Cahall (Note: formerly known as Diana Salisbury)  
7019 Ashridge Arnheim Road  
Sardinia, Ohio 45171  
(937) 446-2763 telephone or 446-4616 fax

Attachment

(VIA: THE U.S. POSTAL SERVICE, REGULAR MAIL, POSTAGE PREPAID ON 9/15/98, AND TELECOPIER TRANSMISSION TO 1-800-820-5156 ON 9/15/98.

*at approx. 3:15 P.M.*

MD192



August 13, 1992

US Department of Energy  
Office of Fissile Materials Disposition  
PO Box 23786  
Washington DC 20026-3786

Re: Pantex hearings on  
plutonium processing - August 11, 1992  
Amarillo, Texas -

To US dept of Energy:

As a former resident of Amarillo, TX, and  
a current member of STAND, I am writing  
to express my opinion that processing  
plutonium on an industrial scale, or for that  
matter, on any scale whatsoever, is contrary to  
common sense and irresponsible to the local  
residents and to the population of the USA.

The Texas Panhandle is a prime agricultural  
area which deserves the best environmental  
protection this country can provide, and  
should not be endangered by the plutonium  
disposition problem. The air, soil, and especially  
ground water, if contaminated by even  
plutonium would be permanently lost to  
this country and the world. We can't risk  
that.

(over) next page

MD021

#### MD021-1

#### Alternatives

DOE acknowledges the commentor's opposition to siting the proposed surplus plutonium disposition facilities at Pantex. The analyses presented in Section 4.26.3.2.2 indicate that the normal operation of these facilities would likely have minor impacts on human health, agriculture, and livestock: Sections 4.17.1.4 and 4.17.2.4 address the potential radiological and hazardous chemical effects of the maximum-impact alternative on workers and the public at Pantex; Appendix J.3, the potential contamination of agricultural products and livestock, and consumption of these products by persons living within an 80-km (50-mi) radius of Pantex. Decisions on the surplus plutonium disposition program at Pantex will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

I am opposed to any industrial or profit motivated uses of plutonium. I believe fissile materials technology has a failing grade - a grade of 50% - that is, we know how to make it, but we don't know how to use make it. Until this technology is developed, plutonium production should be discontinued, I believe, and existing plutonium should be kept stable, guarded well - on site - and not moved around. The perfection of MOX would have to be demonstrated repeatedly, as the FDA drug trials - or much better than that, before industrial scale plans are made. MOX appears to be mostly on the drawing board to me. As a concerned citizen, I urge you at the Dept of Energy to take conservationist approaches to every issue involving fissile materials, and I see your responsibility as guarding the country against exposure to them - until the ability to convert these products to stable elements is devised -

Sincerely  
Harriet Martin  
member of STAND  
POB 1219, Athens OH 45704

MD021

MD021-2

DOE Policy

DOE acknowledges the commentor's opposition to the industrial use of plutonium, the production of plutonium in general, and MOX fuel fabrication. The United States no longer produces plutonium and DOE is not proposing any option to make a profit. The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this.

DOE analyzed numerous alternative disposition technologies in the *Storage and Disposition PEIS*. Immobilization and MOX fuel fabrication were chosen by DOE as the best options to further analyze in this SPD EIS. MOX fuel fabrication is not a new technology. The fabrication of MOX fuel and its use in commercial reactors have been accomplished in Western Europe. This experience would be used for disposition of the U.S. surplus plutonium.

Given Secretary Peña's announcement that  
Savannah River will be the site of the new plutonium  
fuel manufacturing facility, it would seem that  
perhaps we should just thank you for not siting new  
plutonium manufacturing here in the Northwest  
and take the rest of the evening off.

But the same reason why it is a bad idea for the Northwest  
applies anywhere. MOX is the worst method  
\* It is slow-must be run through reactors first  
\* It involves subsidizing nuclear power reactors  
\* It risks pure forms of plutonium falling into  
the hands of people who wish to make  
n-weapons, particularly as part of the  
Russian MOX System  
\* It generates many additional tons and  
gallons of extremely hazardous nuclear and  
chemical wastes, and  
\* It costs a lot more than immobilization.

It is really a very simple decision  
pattern to conclude is a much better alternative  
What seems the decision in favor of MOX is ~~the~~  
the collision of the Russian, ~~and~~ American,  
nuclear power industries.

I would wish you, Mr. Knowlton to carry a  
message to Secretary Richardson and Vice President  
Gore

1

ORD09

ORD09-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach. DOE analyzed each environmental resource area in a consistent manner across all the alternatives to allow for a fair comparison among the alternatives and among the candidate sites for surplus plutonium disposition facilities. Use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. By working in parallel with Russia, the United States can reduce the chance that weapons-usable nuclear material could fall into the hands of terrorists or rogue states and help ensure that nuclear arms reductions will never be reversed. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

As described in Sections 2.18.3 and 4.28.2.8, additional spent fuel would be produced by using MOX fuel instead of LEU fuel in domestic, commercial

we are not failed. This is not a non-proliferation program. It is not a conversion of swords into plowshares, but it is the attempt of the nuclear power industry to convert ~~the surplus plutonium~~ to ~~use~~ a plutonium-fuel economy, ~~and~~ subsidized by the US government.

Please explain to Mr. Gore, who wants to be our ~~new~~ environmental president, that Northwest environmentalists ~~are not~~ <sup>will</sup> figure out that this is a very dangerous ~~and~~ <sup>very</sup> sweet deal for the nuclear power industry. ~~It is~~ <sup>is</sup> ~~not~~ <sup>not</sup> ~~an~~ <sup>an</sup> ~~idea~~ <sup>idea</sup> ~~for~~ <sup>for</sup> ~~our~~ <sup>our</sup> ~~future~~ <sup>future</sup> ~~reactor~~ <sup>reactor</sup> ~~here~~ <sup>here</sup> ~~at~~ <sup>at</sup> ~~Hanford~~ <sup>Hanford</sup>.

Thank you.

1

ORD09

reactors. Spent fuel management at the proposed reactor sites is not expected to change dramatically due to the substitution of MOX assemblies for some of the LEU assemblies. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic repository. Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

POSITIONS AND STATEMENTS  
PLUTONIUM PROCESSING AND MIXED OXIDE (MOX) FUEL

*"We oppose the processing, reprocessing and the production of mixed oxide fuel (MOX) in areas where there is possibility or risk of pollution and contamination of agricultural land, air and groundwater."*

State Policies of the Texas Farm Bureau, 1998, Pages 36-37, Section 137, Lines 24-28

American Farm Bureau Federation Policies for 1998, Page 112, Section 121, Lines 38-41

1

*"The Party recognizes the value of alternative energy and supports continued private research and development of such sources, but we oppose the federal government using hazardous waste as an alternative energy source, such as the processing and/or reprocessing of plutonium and uranium for making Mixed Oxide fuel in agricultural areas and above major water sources."*

Texas Republican State Party 1998 Platform for "Alternative Energy Sources"

2

*"Since the manufacture of nuclear reactor fuel rods has usually led to environmental contamination of land, air, and water, and since the Pantex Plant near Amarillo, Texas is located over the Ogallala Aquifer, the country's largest aquifer, and in the midst of one of the country's largest grain-and-cattle-producing regions, the Democratic Party of Texas opposes the U.S. Department of Energy plan to produce Mixed Oxide (MOX) fuel from plutonium and uranium at the Pantex Plant, or any other form of plutonium processing."*

Texas Democratic State Party 1998 Platform

3

*"A consortium has been formed between Bechtel, BNFL International, and Westinghouse. GE chose not to participate. GE will not receive, store, process, transport, or take title to any material in any stage of the MOX process. I think you have other people to deal with on this one and not GE. Thank you very much."*

Statement by General Electric Corporation Chairman of the Board Robert Welch at annual General Electric shareholders meeting, April 1998

4

ORD14

ORD14-1

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. U.S. policy dating back to the Ford Administration has prohibited the commercial, chemical reprocessing and separation of plutonium from spent nuclear fuel. The use of U.S. surplus plutonium in existing domestic, commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). This SPD EIS analyzes the potential environmental impacts associated with the MOX facility. As presented in Chapter 4 of Volume I and summarized in Section 2.18, potential impacts of construction and normal operation of the MOX facility would likely be minor.

ORD14-2

MOX Approach

Use of MOX fuel in domestic, commercial reactors is not proposed as an alternative energy source. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors.

ORD14-3

MOX Approach

Sections 4.17, among others, and 4.26.3 analyze impacts to the environment, including air, soils, and Ogallala aquifer due to construction and normal operation of the MOX facility at Pantex. There would be no discernible contamination of aquatic biota (fish) or drinking water resulting from the proposed surplus plutonium disposition facilities at Pantex, either from minute quantities of air deposition into small water sources or from any potential wastewater releases. Therefore, it is estimated that no measurable component of the public dose would be attributable to liquid pathways. Appendix J.3 includes an analysis of potential contamination of agricultural products and livestock and consumption of these products by persons living within an 80-km (50-mi) radius of Pantex. This analysis indicates that impacts of

operating the MOX facility on agricultural products, livestock, and human health at Pantex would likely be minor.

**ORD14-4** **MOXRFP**  
DOE acknowledges GE's decision not to participate in the MOX approach.



This is a comment on the hearings for recycling plutonium waste. You know, we're opposed to it out here. Mixing MOX oxide and burning plutonium in commercial (reactors) is very bad. I personally want to see the waste vitrified and not used in commercial reactors. It's a very bad idea. Citizens are really opposed to this and the Department of Energy simply goes on with madness and more madness. Very bad and dangerous idea and I'm a citizen in Portland, Oregon and I don't want it done, period.

1

PD036

PD036-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. To this end, surplus plutonium would be subject to stringent control, and the MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.

DOE has identified as its preferred alternative the hybrid approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.



United States  
Department  
of Energy

Comment Form

NAME: (Optional) EVERETT ANTTILA  
ADDRESS: 3415 NE 22 AV  
TELEPHONE: (503) 288 8970  
E-MAIL: edantila@coho.net

U.D.E.

THE decision to eliminate all nuclear weapons  
all nuclear power to proceed step by step in this  
direction as a governmental policy of U.S.A  
IS LONGER OVERDUE.


THE EARTH CAN NO LONGER SUFFER THE  
PROBABILITY OF ANOTHER "CHERNOBYL" IN  
FACT THE <sup>EXPLOSION</sup> ~~INTELLIGENCE~~ IN THE UKRAINE FROM  
THE SAME NUCLEAR COMPLEX IS AGAIN POSSIBLE  
BECAUSE OF THE UNKNOWN COMBINATION OF  
ELEMENTS BREWING THERE. NATURALLY COAL &  
OIL SHOULD BE REPLACED BY ENERGY OF  
WIND, THERMAL & OTHER ENERGY SOURCES ON WHICH

ORD17

ORD17-1

Other

Consideration of the elimination of nuclear weapons systems and nuclear generated power in favor of renewable energy sources is beyond the scope of this SPD EIS. The scope of this SPD EIS is focused on analysis of alternatives on whether and how much U.S. surplus plutonium should be used as MOX fuel, which technology should be used for immobilization, where to construct the disposition facilities that are needed, and where to perform lead assembly fabrication and testing. By working in parallel with Russia to reduce stockpiles of excess plutonium, the United States can reduce the chance that weapons-usable nuclear material could fall into the hands of terrorists or rogue states and help ensure that nuclear arms reductions will never be reversed. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.



United States  
Department  
of Energy

Comment Form

#2

NAME: (Optional) EVERETT ANTILA

ADDRESS:

TELEPHONE: ( )

E-MAIL:

Funds as great as are spent on expensive

Nuclear Energy should transferred to

sustainable energy sources.

1

MOX is definitely ~~additionally~~ more

costly than the original uranium &

should never never be considered

as a fuel.

2

ORD17

**ORD17-2** **MOX Approach**

The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

My name is Gloria Black and my phone number is (503) 629-5495. I would like to urge the support of cleanup of Hanford and also to say that I oppose the MOX and my feeling is that it's too dangerous to transport plutonium in the Northwest. And also we don't need to create new nuclear waste. So I strongly urge the cleanup. Thank you.

1

PD031

PD031-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach, and support of cleanup at Hanford. DOE believes that Hanford's efforts should remain focused on its current high-priority cleanup mission. The importance of cleanup at Hanford was taken into consideration in identifying preferred sites for surplus plutonium disposition activities. However, no decision has been made, and DOE will continue to consider Hanford for surplus plutonium disposition or other programs that are compatible with the Hanford mission.

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. To this end, surplus plutonium would be subject to stringent control, and the MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.

Hello, my name is Sylvia Bryant. I'm a United States citizen living in Oregon and I believe the MOX approach to handling plutonium is a bad idea. Thank you for giving me this opportunity to express my opinion. Bye-bye.

1

PD052

3-399

**PD052-1**

**Alternatives**

DOE acknowledges the commentor's opposition to the MOX approach. The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.

My name is Nathan Butts from Portland, Oregon and I'm calling to comment on the disposition of plutonium and the alternatives in the Draft EIS and I am opposed to the hybrid alternatives which, which allow the use of plutonium in nuclear plants for use as nuclear fuel. I'm concerned about the environmental effects of the waste generated from this process. I'm concerned about contamination in the making of the fuel, transportation of the fuel, both here and in Russia. There is no guarantees that they're going to handle it properly both during the process and after. With the nuclear waste will be generated and it's not a step towards non-proliferation. The right steps towards non-proliferation is the encapsulation of the plutonium and the best technology for that as is available now, would be the best alternative. At a later date when we have technology for lowering the threat of the use of this fuel as a, as nuclear weapons, then we can use it at that time. We will have it stored and we will have it monitored both here and in Russia, and we can have this as some type of international agreement between the two countries whereas we can't have an international agreement on waste or at least we don't have as firm of one as we should, since we can't even handle our own. That's the end of my comment. If you'd like to give me a call my number is 644-7760, area code 503 and I speak for my household of two. Thank you.


PD044

PD044-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach. The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. For reactor irradiation, the NRC license would authorize only the participating reactors to use MOX fuel fabricated from surplus plutonium, and the irradiation would be a once-through cycle with no reprocessing.

Potential waste management impacts of the proposed surplus plutonium disposition facilities are analyzed in this SPD EIS for each candidate site. Detailed analysis is provided in Appendix H. As described in Sections 2.18.3 and 4.28.2.8, additional spent fuel and would be produced by using MOX fuel instead of LEU fuel in domestic, commercial reactors. Spent fuel management at the proposed reactor sites is not expected to change dramatically due to the substitution of MOX assemblies for some of the LEU assemblies. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic repository. After irradiation, the MOX fuel would be removed from the reactor and managed with the rest of the spent fuel from the reactor, eventually being disposed of at a potential geologic repository built in accordance with the NWPA. Transportation impacts of the MOX approach are summarized in Chapter 4 of Volume I and Appendix L. As indicated in Section 2.18, no traffic fatalities from nonradiological accidents or LCFs from radiological exposures or vehicle emissions are expected.



United States  
Department  
of Energy

Comment Form

8/13/97 (to accompany ORAL comment given @ Portland meeting)

NAME: (Optional) Andrew D Butz (representing self only)

ADDRESS: 2004 NE Commercial St  
Portland, OR 97232-3819

TELEPHONE: (503) 286-7977

E-MAIL: abutz@pcc.edu

Re: "surplus" plutonium disposition (Alternatives II & 12 are only ones near acceptable)

URGENT DEMANDS:

1) Public health/safety must be given the top priority in all actions

2) Thus, all considerations must prioritize immobilization & deactivation

3) Given the level of investment (money, talent) in nuclear proliferation & det.

4) Why can't all further investment be directed exclusively toward:

i) immobilization?

ii) deactivation/neutralization? } THESE MUST BE THE

iii) demilitarization? } ONLY OPTIONS PREFERRED

STOP WORK! DON'T REINFORCE THE NUCLEAR (ARMED) INDUSTRIAL INDUSTRY!

Sincerely,

Andrew D Butz

Social Science Faculty, Portland Community College

\* I am thoroughly unconvinced that demilitarization of weapons-grade

plutonium can only be done through MOX fueling in commercial reactors.

→ STOP THE COLD WAR PARADIGM, UNPLUG THE NUCLEAR PRODUCTION CYCLE!

ORD12

**ORD12-1** **Human Health Risk**

DOE acknowledges the commentor's concern regarding the priority of public health and safety. The Human Health Risk sections presented in Chapter 4 of Volume I discuss the applicable human health risks associated with all alternatives considered. Decisions on the surplus plutonium disposition program will be influenced by these estimated risks.

**ORD12-2** **Alternatives**

DOE acknowledges the commentor's support of disposition alternatives that consider only immobilization. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

Comment Documents and Responses—Oregon

3-401

DEMAIN INC. INVESTMENT CLUB  
RIAN T. SMITH  
PAGE 1 OF 2

4525 SE 76th  
Portland, OR 97266-4450

August 03, 1998

U.S. Department of Energy (DOE)  
Office of Fissile Materials Disposition  
c/o SPD EIS  
P.O. Box 23786  
Washington, D.C. 20026-3786

To whom it may concern,

I read in The Oregonian that the DOE is asking for public input in regards to the 'surplus Plutonium Disposition Draft Environmental Impact Statement'.

In other words, the DOE has too much Plutonium and wants to justify the disposal of it. Well, instead of disposal, why not use some of the billions of dollars the DOE has to research and develop 'nuclear batteries' for Electric cars? Portable computers? Smoke Detectors?

The public already has nuclear pacemakers, so why not expand on that? we use nuclear (Plutonium) batteries to power experiments on the moon. What's stopping the use of such batteries to power portable tape players (walkmans) or other electronic devices?

I would be willing to help fund and be a part of an R+D team if the Department of Energy were to write back and show an interest, however

Page 1 of 2

MD009

MD009-1

Other

DOE acknowledges the commentor's offer of support to fund R&D on alternative uses of surplus plutonium 239. Plutonium batteries, however, are fabricated from plutonium 238. The United States has conducted research and found no current space application for plutonium 239. Because this material, along with Russian plutonium, poses a global proliferation threat, it must be disposed of in a manner that reduces the risk that it can be used by terrorists and rogue nations to build nuclear weapons. The actions proposed in this SPD EIS would implement current U.S. policy on nuclear nonproliferation and disposition of surplus plutonium.



Slight, in such an idea as I have stated. Hey, I'm  
already verses in Government spending: "Why buy one,  
when you can buy two at twice the price." 1  
Thank you for your time.

Sincerely,  
  
Rian T. Smith  
President/Treasurer  
Demail Inc. Investment Club

US DOE needs to hear your voice NOW!

- |   |   |
|---|---|
| 1. Should Clean Up be the sole mission at Hanford?<br><input checked="" type="radio"/> Yes <input type="radio"/> No   | 1 |
| 2. Should the United States Government maintain its longstanding policy against the use of weapons Plutonium to fuel civilian nuclear reactors?<br><input checked="" type="radio"/> Yes <input type="radio"/> No  | 2 |
| 3. Which alternative would you prefer to see the US Department of Energy pursue:<br><input checked="" type="radio"/> Immobilization (encasement of plutonium in glass-like tombs)<br>Or<br>The MOX plan (burning plutonium to fabricate fuel for use in a civilian nuclear reactor)?  | 3 |
| 4. Should Plutonium, to be used for processing and fabrication of MOX fuel, be imported to the Hanford site along the Columbia River?<br>Yes <input checked="" type="radio"/> No  | 4 |
| 5. How concerned are you about the transportation of Plutonium through the Northwest?<br>Not concerned slightly concerned very concerned <input checked="" type="radio"/> completely opposed<br>B. How concerned are you about the transport through the Northwest of fuel containing weapons Plutonium?<br>Not concerned Slightly concerned Very concerned <input checked="" type="radio"/> Completely opposed |   |
| 6. Should commercial nuclear power plants be allowed to run on MOX fuel containing weapons Plutonium?<br>Yes <input checked="" type="radio"/> No<br>B. Should they be subsidized with tax dollars to do so?<br>Yes <input checked="" type="radio"/> No  | 5 |
| 7. Should MOX fuel containing weapons Plutonium be used to restart the FFTF reactor at Hanford to produce Tritium for nuclear bombs?<br>Yes <input checked="" type="radio"/> No   | 6 |

Name GREGG DEMARIA  
Address 241 SE Division, Portland 97202  
Phone 503-233-7631

Please return this to:  
Hanford Action  
25-6 NW 23<sup>rd</sup> Place #406  
Portland, OR 97214  
(503) 235-2531

MD295

MD295-1

DOE Policy

DOE believes that Hanford's efforts should remain focused on its current high-priority cleanup mission. The importance of cleanup at Hanford was taken into consideration in identifying preferred sites for surplus plutonium disposition activities. However, no decision has been made, and DOE will continue to consider Hanford for surplus plutonium disposition or other programs that are compatible with the Hanford mission.

MD295-2

Nonproliferation

U.S. policy dating back to the Ford Administration has prohibited the commercial, chemical reprocessing and separation of plutonium from spent nuclear fuel. The use of U.S. surplus plutonium in existing domestic, commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). The proposed use of MOX fuel is consistent with the U.S. nonproliferation policy and would ensure that plutonium which was produced for nuclear weapons and subsequently declared excess to national security needs is never again used for nuclear weapons. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program.

MD295-3

Alternatives

DOE has identified as its preferred alternative the hybrid approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again.

*Comment Documents and Responses—Oregon*

## Transportation

MD295-5

## MOX Approach

Use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this

proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract. The commercial reactors selected for the MOX approach include only those reactors whose operational life is expected to last beyond the life of the surplus plutonium disposition program.

**MD295-6**

**DOE Policy**

As discussed in Section 1.7.4, Appendix D was deleted because none of the proposals to restart FFTF currently consider the use of surplus plutonium as a fuel source. In December 1998, the Secretary of Energy decided that FFTF would not play a role in producing tritium.

Additional Comments:

THE PRESENTATION AT THE MARKET ON AUG 18<sup>th</sup> GIVEN  
BY THE DOE, STRIKES OF "DOVE-DOVE SYNDROME" IF WE  
ARE MOBILIZED IN THE NOW TO DEFEND GOVT. GOVERNANCE HOW  
CAN WE NOT BEAN ORGANIZED AGAINST WHO STAND TO BE MISSED  
IN THE DISASTROUS POLICY WHICH IS THE LONG TERM ECONOMIC  
PICTURE LONG IS NOT A PLUTONIUM BASED ENERGY CR. ?  
I am interested in helping. I am trained in Asst /  
Sustainable design & have experience in teaching. I am 26  
years old.  
Please call  
GREGG DEMARIA 233-7631

7

MD295-7

General SPD EIS and NEPA Process

DOE acknowledges the commentor's concern regarding open communication and the opposition to the use of plutonium. DOE agrees that everyone has a stake in how plutonium is dispositioned and therefore provided various means for submitting comments: public hearings, mail, a toll-free telephone and fax line, and the MD Web site. Regardless of how they were submitted, all comments received on the SPD Draft EIS were given equal consideration and responded to. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this.

The remainder of this comment is addressed in response MD295-2.

MD295

3-407

August 17, 1998

Sims

Thank you for the opportunity to comment upon the SPD Draft EIS, which is probably the most serious management issue that the world is facing today.

This disposition of plutonium warhead pits is a very profound and technical issue, but in common language I call this project the Great American DOE Arms-Pit Problem--because this dilemma stinks. Nobody in the world knows what to do with plutonium. No one knows how to adequately manage this very toxic and dangerous bomb material.

In light of the fact that the decisionmaking concerning this problem is so serious and has such long lived consequences, I must preface my remarks with the opinion that the Department of Energy has not done a very good job at either educating the general public or involving the public at large in this unprecedented monumental project.

I appreciate the fact that we have been granted a special hearing here in Portland...but the fact remains that the choice to hold interactive scoping meetings ONLY near sites that may be affected was totally inadequate. In reality, the sites that may be affected include not only the sites chosen for specific operations, but all sites along proposed transportation routes, all areas surrounding nuclear power plants that have submitted letters of intent to consider the MOX option, and all sites that may be contaminated by accidental spills, leaks and explosions which may be attendant to these operations!

Besides, holding hearings in only 5 locations, mainly where jobs are affected, brings local economic issues into a place of prominence when these decisions should be primarily based upon scientific evaluation and technical issues along with worldwide health and safety, environmental impact, proliferation and power source implications.

The decisions made today have significantly profound and dangerous implications for the future of the world. We must do a better job than those who chose to produce so much plutonium in the first place. We have created a terrible assault upon the

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ORD07-1 General SPD EIS and NEPA Process

DOE has initiated a number of activities and events to involve and educate the public about these very important issues. Since the inception of the plutonium disposition program, it has conducted public hearings in excess of the minimum required by NEPA regulations at various locations around the country, not just near the potentially affected DOE sites. DOE is also active in various supplementary public education initiatives: it continues to mail information (e.g., fact sheets) to interested members of the public; MD has established a Web site (<http://www.doe-md.com>) to provide current information to the public; and senior staff members make presentations to local and national civic and social organizations on request.

ORD07-2 General SPD EIS and NEPA Process

Although it was not possible to hold public hearings in all locations potentially affected by surplus plutonium disposition actions, DOE provided various other means for the public to express their concerns and provide comments: mail, a toll-free telephone and fax line, and the MD Web site. All comments, regardless of how they were submitted, were given equal consideration and responded to.

ORD07-3 MOX Approach

DOE acknowledges the commentator's support of surplus plutonium disposition alternatives that consider no action (storage) or immobilization. Continued storage of surplus plutonium, as discussed under the No Action Alternative in Section 2.5, would not satisfy the surplus plutonium disposition program goal. The goal is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the

world environment and economy that has no apparent satisfactory solution. For these reasons we must choose with utmost care the direction we take. As we examine the situation there are many compelling reasons to eliminate the MOX option and choose vitrification or ceramic immobilization or perhaps storage as Dominici has recently put forth, as the only reasonable alternatives for this immediate point in time, until we develop advanced technologies to improve upon our ability to dispose of plutonium.

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\* We already know that a portion of surplus plutonium is suitable only for vitrification. In an economic sense, if this vitrification track must be followed, it makes little sense to spend comparable, and probably more, monies on a second track which takes longer to accomplish. MOX involves huge taxpayer subsidies to commercial nuclear power plants in order that they be able to compete with non-nuclear power sources. These plants will need repairs and modifications, they will encounter a higher risk of safe operation problems, and they will produce spent fuels which are more difficult to transport and store safely for the long term. Both wet pool and dry cask designs may have to be revisited to accommodate the hotter spent fuels.

4

The conclusions in the RAND WASTE HEAT IMPLICATIONS OF ALTERNATIVE METHODS FOR DISPOSING SURPLUS WEAPONS PU (DRU-1651-DOE JUNE 1997 states "the increased heat output (of spent MOX produced by burning surplus weapons Pu in existing LWRs) will significantly increase the amount of space that the spent MOX fuel takes up in a geologic repository and therefore will significantly increase the cost to dispose of this material. This increase in heat output is an inevitable consequence of the increased production of Am 241 which results from the use of MOX produced from WPU. This result holds true whether the MOX is burned in a LWR or a BWR." This issue needs to be adequately addressed in both safety and economic aspects.

\* MOX fuel has been made on an industrial scale only from reactor grade plutonium NOT from weapons grade plutonium. With WPU There are unresolved fabrication issues such as gallium removal and the attendant wastes.

Dr. Toevs and Dr. Beard from Los Alamos (LANL document LA-UR-96-4764) indicate that Pu pits do not all have the same concentration of gallium and the sintering process parameter would have to be adjusted as the gallium concentration changed

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world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

ORD07-4

MOX Approach

DOE acknowledges the commentor's concern about the preferred approach of using both immobilization and MOX fuel fabrication to surplus plutonium disposition. As discussed in response ORD07-3, pursuing the hybrid approach provides the United States important insurance against potential disadvantages of implementing either approach by itself.

Use of MOX fuel in domestic, commercial reactors is not proposed in order to subsidize the commercial nuclear power industry. Rather, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard. The Spent Fuel Standard, as identified by NAS and modified by DOE, is to make the surplus weapons-usable plutonium as inaccessible and unattractive for weapons use as the much larger and growing quantity of plutonium that exists in spent nuclear fuel from commercial power reactors. The MOX facility would produce nuclear fuel that would displace LEU fuel that utilities would have otherwise purchased. If the effective value of the MOX fuel exceeds the cost of the LEU fuel that it displaced, then the contract provides that money would be paid back to the U.S. Government by DCS based on a formula included in the DCS contract.

Section 4.28 was revised to discuss the environmental impacts of operating the reactors that would use MOX fuel. Commercial reactors in the United States are capable of safely using MOX fuel. Modifications would need to be made to the fuel assemblies that would be placed in the reactor vessel to support the use of MOX fuel, but the dimensions of the assemblies would not change. (Operating procedures, fuel management plans, and other activities would also need to be modified.) DOE has used selection criteria in the procurement process which ensure that the reactors chosen would be capable of safely and successfully completing the surplus plutonium

disposition program. In addition, NRC would evaluate license amendment applications and monitor the operation of the domestic, commercial reactors selected to use MOX fuel. After irradiation is complete, the spent fuel would be stored on the site pending eventual disposal pursuant to the NWPA.

MOX fuel would be handled the same as other fuels with regard to pools and dry casks. MOX fuel assemblies would be the same size and shape as the LEU fuel for the specific reactor. The only difference would be the additional decay heat from the higher actinides, especially americium, in the MOX fuel. Dry casks are designed and certified for a maximum heat load, so the additional decay heat would contribute to the total heat load and not require any redesign. The additional heat load may result in less spent fuel stored per cask. A more likely option is that the MOX fuel would be selectively packaged with cooler LEU fuel to obviate any overall heat output restriction. As a result, DOE does not expect any changes in the cask design, and thus no additional cost.

As described in Sections 2.18.3 and 4.28.2.8, additional spent fuel would be produced by using MOX fuel instead of LEU fuel in domestic, commercial reactors. Spent fuel management at the proposed reactor sites is not expected to change dramatically due to the substitution of MOX assemblies for some of the LEU assemblies. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic repository. Issues related to a potential geologic repository for HLW and spent nuclear fuel are beyond the scope of this SPD EIS, but are being evaluated in the *Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250D, July 1999). Transportation of HLW or spent fuel would be required for either the immobilization or MOX approach to surplus plutonium disposition. Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle*



*Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

The RAND study cited by the commentor analyzed a NWP repository design that is very different from the reference repository design being analyzed by DOE. Moreover, the information in the study does not pertain directly to the disposition of surplus plutonium, and thus, was not used in the preparation of this SPD EIS.

Section 4.28 discusses the potential environmental impacts of operating the Catawba, McGuire, and North Anna nuclear stations, the reactors that would use the MOX fuel, should the decision be made to proceed with the hybrid approach. Operation of the proposed surplus plutonium disposition facilities is expected to take approximately the same amount of time for either approach. The difference in timing for the hybrid approach is associated with the amount of time that MOX fuel would be irradiated in domestic, commercial reactors. However, none of the proposed reactors are expected to operate longer under the hybrid approach than they would if they continued to use LEU fuel.

**ORD07-5                      Plutonium Polishing and Aqueous Processing**

It is understood that weapons-grade plutonium has not been used to fabricate MOX fuel. At the time DOE issued the SPD Draft EIS, it believed the gallium content in the plutonium dioxide feed specifications for MOX fuel could be reached using the dry, thermal gallium removal method included in the pit conversion process. However, in response to public interest on this topic and to ensure adequate NEPA review in the event that the gallium specification could not be met with the thermal process, an evaluation of the potential environmental impacts of including a small-scale aqueous process (referred to as plutonium polishing) as part of either the pit conversion or MOX facility was presented in Appendix N of the SPD Draft EIS. On the basis of public comments received on the SPD Draft EIS, and the analysis performed as part of the MOX procurement, DOE has included plutonium polishing as a component of the MOX facility to ensure adequate impurity removal from

which is undesirable in an industrial-scale operation. MOX fuel with excessive gallium presents problems because it chemically attacks zirconium. The current technology for gallium removal is an aqueous process which results in the generation of large quantities of liquid radioactive wastes. A dry process is yet to be developed and would lengthen the MOX program. No problems involving gallium that would affect Pu vitrification have been identified, nor are they anticipated.

There are also unresolved safety issues when using WPu including:

1. the increase of structural stresses on power plants due to the higher temperatures of WPu MOX fuels
2. the stability of operation due to the lessening of delayed neutrons and
3. increased risks of the severity of accidents involving plutonium

\*The introduction of these safety problems demand plant modification. The change in delayed neutrons will necessitate the addition of more control rods and the addition of boron to coolant water in order to help restore adequate control. More stresses upon the structural integrity of the plant will appear because of the higher temperatures involved with MOX fuel, and that problem must be seriously addressed as many of our plants are aging and already have steam tube cracking and containment embrittlement problems. The risk of catastrophic accidents should not be increased at any power plants and neither should the consequences of accidents be increased. Therefore it should be absolutely a requirement the NRC must relicense any plant considering MOX and a new criteria should be developed with opportunity for public comment on these vital issues. This of course would have to apply to Russian plants also, since radiation knows no boundary.

\*The U.S. plants which have expressed interest in MOX want compensation far in excess of direct costs. Jack Bailey, vice president of Palo Verde, a leading candidate for MOX use stated in March 1996 "We also stress in our letters to DOE that any initiative should address potential benefits to ratepayers and shareholders...The benefits must be substantial. If not, the entire proposition is a non-starter. What I mean specifically is that any agreement involving Palo Verde would require more than

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the plutonium dioxide. Appendix N was deleted from the SPD Final EIS, and the impacts discussed therein were added to the impacts sections presented for the MOX facility in Chapter 4 of Volume I. Section 2.18.3 was also revised to include the impacts associated with plutonium polishing. While this additional step is expected to add to the estimated waste streams, the projected increases would be relatively small.

ORD07-6

NRC Licensing

The commentor expresses concerns that MOX fuel will result in a lower delayed neutron fraction, an increase of structural stresses due to higher MOX fuel temperatures and increased accident risks. These parameters require that the nuclear core designers accommodate these differences using verified and validated codes that incorporate these effects. Such nuclear codes have been used successfully in Europe and will be adopted and utilized by fuel designers in the United States. A reactor operating license amendment will be required for each individual reactor before it can use MOX fuel. The regulatory process will be the same as for other operating license amendment requests. The reactor licensee will initiate the process by submitting an amendment request in accordance with 10 CFR 50.90. Safety and environmental analyses, as required by NRC regulations, are submitted to NRC in support of, and as part of, the amendment request. The communities near the reactors proposed for irradiation of MOX fuel and all other interested parties will likely have the opportunity to submit comments during the NRC reactor license amendment process should the MOX approach be selected.

The licensing of Russian plants that may use MOX fuel is beyond the scope of this EIS. The remainder of this comment is addressed in response ORD07-4.

ORD07-7

MOX Approach

Because cost issues are beyond the scope of this SPD EIS, this comment has been forwarded to the cost analysis team for consideration. The *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998) report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document*

the incremental costs associated with using MOX fuel instead of uranium. That kind of payment would be insufficient." (Third International Policy Forum: Deploying the Reactor/MOX Option for Plutonium Disposition Within the Current System of U.S. and Canadian Nuclear Reactors--Regulatory, Policy Impediments. Lansdown, VA March 21, 1996)

The MOX option involves huge taxpayer subsidies to plants for modifications, upgrades & repairs & beyond that, payment to keep competitive profits. It is the greatest corporate welfare scam ever perpetrated upon the people in the history of mankind. The only MOX benefit is profits to the nuclear industry at the expense of the environment, materials handlers and the population of the world.

\*What are the changes in the Price Anderson Act to address the increased operational and safety risks? The true cost of MOX would be astronomical.

\* In the context of human values, choosing the MOX option leads the world in the wrong direction for future energy generation, which should be focused on safer, less polluting sources. The MOX alternative is loaded with the creation of long lived hazardous materials from fuel fabrication to the spent fuel produced. At this time we are not able to cope satisfactorily with the amounts of chemical and radioactive wastes and spent fuel which has

already been generated both in the military production and commercial sectors and it is irresponsible to add to this waste burden.

\*Transport and onsite storage of fresh MOX fuel is a proliferation risk because it is very vulnerable to theft. At the present time there are no Russian agreements for IAEA security.

\*Fresh MOX fuels also incur higher expenditures because the shipments of these fuels demand military escort wherever they are and may require separate fresh fuel storage facilities since MOX fuel would emit higher gamma and neutron radiation.

\*There are more possibilities of proliferation risks with the MOX option because the accounting system for tracking amounts of plutonium along the MOX program leaves room for error. Even if no plutonium were diverted from the program, The Joint US/Russian

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(DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

The remainder of this comment is addressed in response ORD07-4.

ORD07-8

NRC Licensing

To ensure reactor safety, NRC would evaluate license applications and monitor operations of the MOX fuel fabrication facility, as well as the domestic, commercial reactors selected to use MOX fuel. No change to the Price Anderson Amendment Act has been considered and none would be necessary.

ORD07-9

MOX Approach

The purpose of the surplus plutonium disposition program is not to provide future energy generation but to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program.

Potential waste management impacts of MOX fuel fabrication alternatives are summarized in Chapter 4 of Volume I and discussed in detail in Appendix H.

The remainder of this comment is addressed in ORD07-4.

ORD07-10

Nonproliferation

DOE acknowledges the commentator's concerns regarding transportation and MOX fuel storage. In order to address security against terrorist-related

incidents, all intersite shipments of plutonium for the surplus plutonium disposition program would be made using DOE's SST/SGT system. This involves having couriers that are armed Federal officers, an armored tractor to protect the crew from attack, and specially designed escort vehicles containing advanced communications and additional couriers. Further, the three DOE disposition facilities proposed in this SPD EIS are all at locations where plutonium would have the levels of protection and control required by applicable DOE safeguards and security directives. Safeguards and security programs would be integrated programs of physical protection, information security, nuclear material control and accountability, and personnel assurance. Security for the proposed facilities would be commensurate with the usability of the material in a nuclear weapon or improvised nuclear device. Physical barriers; access control systems; detection and alarm systems; procedures, including the two-person rule (which requires at least two people to be present when working with special nuclear materials in the facility); and personnel security measures, including security clearance investigations and access authorization levels, would be used to ensure that special nuclear materials stored and processed inside are adequately protected. Closed-circuit television, intrusion detection, motion detection, and other automated materials monitoring methods would be employed. Furthermore, the physical protection, safeguards, and security for the MOX facility and domestic, commercial reactors would be in compliance with NRC regulations.

The implementation process for international inspection of U.S. and Russian surplus plutonium is not fully defined. That process is part of ongoing sensitive negotiations being conducted to reach a bilateral plutonium disposition agreement between the United States and Russia in accordance with the Joint Statement of Principle, which was signed by Presidents Clinton and Yeltsin in September 1998.

ORD07-11

Transportation

Transportation of surplus plutonium until it reaches its final disposition form would use DOE's SST/SGT system regardless of the approach taken. This system does not use a military escort, rather the SST/SGT system uses armed Federal officers. The cost of transportation to implement the surplus plutonium disposition program, regardless of the approach, is dependent on the number

of trips and the length of the various transportation segments. Table L-3 shows the number of trips and the distance traveled for each alternative. Some of the hybrid alternatives would require less transportation than some of the immobilization-only alternatives. However, the risks from transportation for all of the alternatives would likely be minor.

The MOX fuel would be managed essentially the same way as fresh LEU fuel. However, there would be tighter security and potentially higher costs. The plutonium would be received at the reactor site shortly before it would be inserted into the reactor. Any actual restrictions or requirements related to the storage of fresh MOX fuel would be imposed by NRC as part of the reactor operating license amendment.

**ORD07-12** **MOX Approach**

If U.S. surplus plutonium is dispositioned as MOX fuel in the United States, it would be done with the stipulation that the material could only be used once and not reprocessed. U.S. policy dating back to the Ford Administration has prohibited the commercial, chemical reprocessing and separation of plutonium from spent nuclear fuel. The use of U.S. surplus plutonium in existing domestic, commercial reactors does not involve reprocessing (reprocessing is a chemical separation of uranium, transuranic elements [including plutonium], and fission products from spent reactor fuel and the reuse of the plutonium and uranium to produce new fresh fuel). There is no intention to change this policy to allow reprocessing at any time in the future.

The remainder of this comment is addressed in response ORD07-10.

Plutonium Disposition Study states "...Russia will ultimately recycle any plutonium left in the [MOX spent] fuel." And, "the U.S. objective of plutonium disposition" appears to be satisfied if MOX spent fuel "is stored for several decades before reprocessing." (Joint US/Russian Plutonium Disposition Study, September 1996, p. ExSum-2.) Therefore, if we choose the MOX option, the United State will be supporting the infrastructure for a plutonium economy in Russia and indeed perhaps promoting eventual reprocessing in the United States. This is a dangerous and intolerable outcome.

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FOR ALL THE ABOVE REASONS THE DOE SHOULD DISCONTINUE THE MOX APPROACH FOR SURPLUS PLUTONIUM DISPOSITION.

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\*As far as the political maneuvers are concerned (noticing that Russia views Pu as an asset while the general view in the USA ranges from Special Nuclear Material to Economic and Environmental Liability) that just because Russia seems determined to jump over the edge of the cliff it does not mean that we must follow!! Instead we should remember that the United States in reality has the ultimate persuasion because we have more money and will be aiding Russia with its plutonium disposition. Russia has not seriously considered using MOX in LWRs until now.

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Russian operating VVER-1000 reactors would not be able to consume 50 metric tons of surplus plutonium within the timeline of 20 to 40 years set by the joint panels. In order to have that happen, 3 partially built reactors would have to be finished, or reactors in Ukraine would have to be loaded with MOX or reactors would have to operate beyond their lifetimes which would increase safety risks. The MOX option in Russia is further complicated by the crumbling economy and the temptation of the black market. Instead we should offer subsidies to build pilot vitrification plants.

\*The MOX option is completely unacceptable, but the vitrification process is also not without risk. Converting plutonium pits for glassification also involves health and safety risks and the creation of sidestream wastes.

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ORD07-13

MOX Approach

This comment is addressed in response ORD07-3.

ORD07-14

Nonproliferation

Close cooperation between the two countries is required to ensure that nuclear arms reductions cannot be easily reversed. Understanding the economic dilemma in Russia, the U.S. Congress has appropriated funding for a series of small-scale tests and demonstrations of plutonium disposition technologies jointly conducted by the United States and Russia. In fiscal year 1999 (starting October 1998), Congress further appropriated funding to assist Russia in design and construction of a plutonium conversion facility and a MOX fuel fabrication facility. This funding would not be expended until the presidents of both countries signed a new agreement. Although the amount appropriated by Congress is not sufficient to fund the entire Russian surplus plutonium disposition program, the United States is working with Russia and other nations to resolve this issue.

ORD07-15

Alternatives

DOE acknowledges the commentor's concerns regarding health and safety risks associated with proposed surplus plutonium disposition facilities. All facilities for surplus plutonium disposition would be constructed and operated to meet applicable health and safety standards and some facilities may be subject to international inspection. DOE takes into consideration pollution reduction techniques to minimize environmental releases when designing, constructing, and operating its facilities. Analysis in this SPD EIS indicates that impacts to health, safety, and waste management from routine operation of the pit conversion, immobilization, and MOX facilities would likely be minor.

DOE has evaluated alternatives for immobilizing all of the surplus plutonium, however, DOE has identified as its preferred alternative the hybrid approach. As shown in the cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), it is expected that the hybrid approach, which includes both immobilization and MOX fuel, would be more expensive than the immobilization-only approach. However, pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential

\*If we are concerned for a swift resolution to the proliferation risk posed by plutonium, then vitrification is the better alternative because it can be accomplished in less time than the MOX option, is less expensive and has fewer facilities to manage and safeguard.  
Any facilities used should be in strict compliance with the most stringent safety regulations and be under constant inspection.  
When sidestream wastes are generated it must be guaranteed to be isolated from the environment. Transport of hazardous materials must be kept at a minimum.

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The people of Oregon do not want more contamination at Hanford. We have had to implore the DOE for a comprehensive assessment of Hanford waste upon the Columbia River. We have not received enough money for adequate monitoring let alone good containment or aggressive clean up. We will not tolerate MOX operations on any level at Hanford. Too many risks are involved. NOR WILL WE TOLERATE MOX ANYWHERE.

Contrary to the slogan advertisement of Hanford as a site of Environmental Excellence, we have seen as recently as the 5/14/97 explosion in the Plutonium Reclamation Facility that the management is inadequate. Even an ordinary chemical accident happened because of improper monitoring. Compounding the implications of such mismanagement is the fact that the official DOE NEWS release of May 28 stated "The team has verified that no radioactive materials were involved in the accident..." The admission of the presence of plutonium was not admitted until July. This implies that either management did not know what was happening or that issues vital to public safety were deliberately covered up. We will never be assured that the personnel at Hanford, or any workers anywhere for that matter, will be able to satisfactorily manage the MOX program. Hanford is not the site to handle any portion of the MOX program, we have enough problems on our hands

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Why are we even considering the MOX option? It is more dangerous, more risky, more expensive, more problematic, involves more transport of fissile materials, opens more opportunities to terrorists and black market dealers and leaves us with spent fuels that are difficult and expensive to store for the long term. RUSSIA HAS STATED THAT THEY WOULD WANT TO REPROCESS, WHICH PROMOTES A PLUTONIUM ECONOMY AND

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disadvantages of implementing either approach by itself. It also gives the United States more leverage in negotiations with Russia as discussed in response ORD07-3. Operation of the proposed facilities is expected to take approximately the same amount of time for either the immobilization-only approach or the hybrid approach. The difference in timing for the hybrid approach is associated with the amount of time that MOX fuel would be irradiated in domestic, commercial reactors.

While DOE prefers to minimize the transportation of plutonium, it is routinely and safely transported in the United States. As described in Appendix L.3.3, transportation of nuclear materials would be performed in accordance with all applicable DOT and NRC transportation requirements. Interstate highways would be used, and population centers avoided, to the extent possible.

All shipments of surplus plutonium that had not been converted to a proliferation-resistant form would use DOE's SST/SGT system. The transportation of special nuclear materials is the subject of detailed planning with DOE's Transportation Safeguards Division. The dates and times that specific transportation routes would be used for special nuclear materials are classified information; however, the number of shipments that would be required, by location, has been included in this SPD EIS. Additional details are provided in *Fissile Materials Disposition Program SST/SGT Transportation Estimation* (SAND98-8244, June 1998), which is available on the MD Web site at <http://www.doe-md.com>.

#### ORD07-16

#### DOE Policy

DOE believes that Hanford's efforts should remain focused on its current high-priority cleanup mission. The importance of cleanup at Hanford was taken into consideration in identifying preferred sites for surplus plutonium disposition activities; however, no decision has been made, and DOE will continue to consider Hanford for surplus plutonium disposition or other programs that are compatible with the Hanford mission.

The News Release of May 28 correctly stated that the explosion did not involve radioactive materials. It reported: "The team has verified that no radioactive materials were involved in the accident that blew the steel lid off

the storage tank, rupturing the overhead fire protection water line.” This was reiterated in the eighth paragraph, which stated: “No evidence of radioactivity release during the accident has been found.” This statement was correct and the Summary Report of the Accident Investigation Board (July 26, 1997) confirmed in the last sentence of the third paragraph that no radioactive materials were involved in the explosion. It states: “Results of extensive sampling, contamination surveys, and stack monitoring data, show that nondetectable airborne radioactivity was released from the facility.” The May 28 News Release did acknowledge the potential presence of plutonium as part of the after-effects of the explosion. It stated in the last paragraph that: “analysis of water collected inside the building showed no chemical contamination. It contained radioactive contamination slightly above-background levels, which is believed to have come from a prior incident resulting from previous operations in the building.” The investigators were sure that this was not directly from the explosion. However, efforts did continue throughout the investigation to determine if the contamination had been carried from some other part of the building by the water that flowed from a cut in a small fire-suppression water line. However, this survey was complicated due to the preexisting spots of contamination in the same areas. This included contamination surveys where water had flowed out building doors. The result of this was a conservative position that the very small amount of contamination found outside, which was barely above-background counts, “was likely” carried out by the water. This was reported in the accident summary report as, “Water from the cut water line flooded the building, and some of it flowed out through various facility exit doors. Extensive surveys conducted inside and outside the building revealed radioactive contamination on the first floor of the facility, and a small area of slightly above-background levels of radioactive contamination outside, that was isolated and immobilized. The contamination found outside was likely the result of water flowing across walls and floors of contaminated areas of the facility, carrying radioactive material outside the building.” Following the May 1997 explosion at Hanford, a review of the emergency management response indicated that multiple programs and systems failed in the hours following the accident. In a letter to Secretarial Offices, Secretary of Energy Federico Peña identified action to be taken at all DOE sites to implement lessons learned as discussed in Section 3.2.4.5 of this SPD EIS. It is DOE’s



INCREASES HANDLING AND PROLIFERATION RISKS. RUSSIA  
ALSO WANTS THE WEST TO FINANCE THE OPERATIONS AND  
OFFER MONETARY INCENTIVES...MORE REASONS TO NIX MOX.

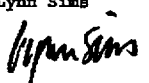
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The state of the world plutonium problem is so severe  
that it will be a miracle if we accomplish the  
disposition task. IT MAKES MOST SENSE TO CHOSE  
STORAGE WHILE DEVELOPING IMMOBILIZATION TECHNIQUES AND  
FINANCING ONLY THOSE OPTIONS WHICH DO NOT PROMOTE A  
PLUTONIUM ECONOMY.

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Respectfully submitted,

Lynn Sims



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policy to place public safety above other program goals. DOE is committed to public and worker safety during the construction, operation, and deactivation of the proposed surplus plutonium disposition facilities, and would implement appropriate controls and procedures to ensure compliance with all applicable Federal, State, and local laws, rules, regulations, and requirements.

**ORD07-17** **MOX Approach**  
This comment is addressed in responses ORD07-3, ORD07-12, and ORD07-14.

**ORD07-18** **MOX Approach**  
This comment is addressed in response ORD07-3.

AUGUST 18, 1998

Sims page 1

SURPLUS PLUTONIUM DISPOSITION DRAFT ENVIRONMENTAL IMPACT  
STATEMENT PUBLIC COMMENT

Thank you for holding a hearing regarding Plutonium Disposition in Portland. Even more hearings must be held on this important national and international policy making environmental impact statement. Plutonium policy must be democratized, not just made still in semi-secret, mainly holding hearings only in areas in the vicinities of involving those who are directly impacted by plutonium related jobs programs.

1

I take issue with the basic DOE statement that "this draft SPDEIS identifies reasonable alternatives for plutonium disposition." The dual track strategy is on the wrong track headed over the cliff to catastrophe. The MOX option promotes more handling, more transport, increased risk of accidents, increased risk of health problems, increased expenses, more problematic spent fuel disposal and more security risks than guarded storage or prompt immobilization. The Department's continued emphasis upon MOX fuels, in light of all we know today, as a reasonable disposition option, seems to reflect a lingering institutional insanity.

2

The Nuclear Control Institute argues that "using MOX fuel for commercial nuclear power plants is simply too expensive and too risky. Stimulating commerce in plutonium is a recipe for disaster. Mox takes too long. MOX costs too much. Tens of billions of dollars will probably be needed to underwrite the Russian nuclear power industry so that it can use MOX fuel. MOX is too dangerous. MOX fuel reduces the stability of reactor cores. MOX increases the severity of certain accidents. MOX undercuts non-proliferation and arms control." (Paul Leventhal, *The Case Against Using Military Plutonium as Civilian Fuel*, March 12, 1998)

This SPDEIS states that "the purpose of and need for the proposed action is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner." MOX is neither environmentally safe nor timely. Moreover, we have just had a terrible confirmation of the saying that "nuclear power, powers nuclear bombs" when India exploded the "peaceful atom". MOX would not curb proliferation. The more plutonium is handled and transported, the more risk there is of inaccurate accountability and diversion. If our purpose is to reduce the availability of plutonium, then promoting a plutonium economy, MOX fuel and Russian reprocessing is obviously THE WRONG TRACK.

3

In early August 1998 even Senator Domenici had called for a new approach to Plutonium Disposal in face of the astronomical expenses. The ENERGY DAILY explained that Senator Domenici learned from the Russian minister of atomic energy that Russia would pursue its MOX program only if the West paid for the construction of a MOX fuel fabrication plant in Russia... And paid additional compensation to encourage Russia to use the MOX in their reactors. This stupendous military-industrial complex corporate welfare would wreck the world budget.

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General SPD EIS and NEPA Process

DOE held a number of regional hearings in places such as Boston, Chicago, Denver, and San Francisco during the preparation of the Storage and Disposition PEIS. To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites, and therefore, with the most directly affected population. To encourage participation and comment by all interested citizens not in the vicinity of those public hearing locations, DOE provided a number of means for submitting comments: mail, a toll-free telephone and fax line, and the MD Web site. All comments submitted, orally and in writing, were considered equally in the preparation of this SPD EIS. DOE does not believe any additional hearings are necessary.

ORD06-2

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself. The hybrid approach also provides the best opportunity for U.S. leadership in working with Russia to implement similar options for reducing Russia's excess plutonium in parallel. Further, it sends the strongest possible signal to the world of U.S. determination to reduce stockpiles of surplus plutonium as quickly as possible and in a manner that would make it technically difficult to use the plutonium in nuclear weapons again. By working in parallel with Russia to reduce stockpiles of excess plutonium, the United States can reduce the chance that weapons-usable nuclear material could fall into the hands of terrorists or rogue states.

Operation of the proposed surplus plutonium disposition facilities is expected to take approximately the same amount of time for either approach. The difference in timing for the hybrid approach is associated with the amount of time that MOX fuel would be irradiated in domestic, commercial reactors. However, none of the proposed reactors are expected to operate longer under the hybrid approach than they would if they continued to use LEU fuel.

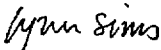
Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs

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Domenici believes Russian officials would support conversion of plutonium to unclassified shapes and storage under international oversight. This is an idea that makes some kind of common sense for fast track securing of plutonium.

On top of all the economic, health, environmental and proliferation liabilities of the MOX option is the significant fact that no nongovernmental organization, public interest group or environmental organization either here or in Russia wants MOX to happen. In Russia the Center for Nuclear Ecology and Energy Policy of Socio-ecological Union of 200 environmental organizations has a special resolution against MOX fuel. Hundreds of Western groups signed on to a letter calling for an end to all policies and practices that would allow or encourage the use of plutonium as a fuel in nuclear power reactors in March of this year. We the people have the right to determine what future we want regarding the profound subject of plutonium disposition. It is very telling that it is only people who make money from MOX projects support it. This is the kind of damaged reasoning that places greed before responsibility to the people, the environment and future generations.

We don't want MOX operations at Hanford, or Pantex, or INEEL or Savannah River or at any site in Europe or Asia. Nobody in their right mind wants a plutonium economy and we ask you to do the right thing and reconsider going forward with MOX plans and concentrate only upon swift guarded storage and immobilization technologies.

Respectfully submitted,



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associated with the various alternatives. A separate report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at <http://www.doe-md.com> and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

Section 4.28 was revised to provide reactor-specific analyses and discuss the potential environmental impacts of using a partial MOX core. Decisions on the surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

#### ORD06-3

#### DOE Policy

The goal of the surplus plutonium disposition program is to reduce the threat of nuclear weapons proliferation worldwide by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Converting the surplus plutonium into MOX fuel and using it in domestic, commercial reactors is an effective way to accomplish this. Consistent with the U.S. policy of discouraging the civilian use of plutonium, a MOX facility would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site, it would be owned by the U.S. Government, operations would be limited exclusively to the disposition of surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program.

DOE's surplus plutonium disposition program is not a profit-making venture. This SPD EIS does not consider the impacts of any of the alternatives on the Russian plutonium disposition program. However, DOE is working diligently to ensure that Russia continues to pursue plutonium disposition with the same vigor as the United States. The United States does not currently plan to implement a unilateral program; however, it will retain the option to begin certain surplus plutonium disposition activities in order to encourage the Russians and set an international example.