

Sara Ennis
4546 NE Alameda
Portland, OR 97213

To the Secretary of Energy, 8/11/98

I am outraged by this environmentally and economically unjustifiable pursuit of nuclear energy as proposed by the plan to burn MOX fuel at Hanford or Savannah River, SC.

With the toxic facts in front of you, such as how long MOX requires to cool, problems of storage and transport, hazards of production, how can you knowingly put a nuclear threat of such magnitude into anyone's back yard?

FD204

FD204-1

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach. Neither Hanford nor SRS has been proposed for irradiation of MOX fuel. Both sites, however, have been evaluated as candidate sites for the fabrication of MOX fuel. As indicated in the revised 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 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. 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.

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.

It would seem that the only economic reason for pursuing the innovation of MOX fuel, would be to boost the nuclear industry. Clearly the foreseeable costs are enormous and the unforeseeable costs, I suspect are beyond speculation.

The project in and of itself is blatantly stupid, but in consideration of the missed opportunity to develop clean, renewable sources of energy, I find the proposal absurd.

I sincerely hope that in the near future you take on a global perspective of health + safety in energy production.
Sincerely,
Sara Ennis

FD204

Hello, my name is Joyce Fallingstead and I'm a concerned citizen from Portland, Oregon. I'm calling to say that I would like the MOX fuel, the mixed oxide fuel, to not be used in commercial nuclear reactors. I believe it is dangerous to distribute plutonium to reactors around the country both in regard to the handling involved, as well as the decentralization, as well as the transportation. I believe the immobilization of surplus plutonium through vitrification would be a much safer way of working with our surplus plutonium. I would like very much for the plutonium to not be used as a mixed oxide fuel, and, thank you for taking my comment. Bye-bye.

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PD065

PD065-1**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.

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.

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.

Yeah, I would like a copy of the Surplus Plutonium Disposition Draft Environmental Impact Study. My name is Loren Fennell and my PO Box is 4111 Portland, Oregon 97208. Yeah, I would also like to make a comment on this, this disposition that, number 1) I know for a fact that there is, like, thousands of gallons of high and material of highly radioactive waste leaking in, into the watershed of the Columbia River and/or at least heading that way.

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How many years do we have to wait, you know, before that's cleaned up and any more MOX fuel factories that will make and utilize other waste. I mean it's just, it's kind of crazy. It's not a very safe concept and I don't approve of it and I would just you know, hope that you know, we wake up to the alternatives to energy like wind, solar and bio-mass conversion of our garbage waste for example. So please take this into consideration and I would like a copy as soon as possible. And I thank you very much. Bye.

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PD040

PD040-1

Water Resources

DOE acknowledges the commentor's concern regarding the quality of the Columbia River. Section 3.2.7 provides a description of water resources at Hanford, including their present condition. Section 4.26.1.2 summarizes the potential impacts on surface and groundwater that would result from the proposed surplus plutonium disposition facilities at Hanford. Surface water would not be used in construction or operation nor would there be direct discharges of wastewater from the facilities. Likewise, there would be no direct discharge of wastewater into the groundwater aquifer. All wastewater would be treated prior to discharge in facilities designed to meet NPDES permit limitations. Therefore, no impact on surface or groundwater quality or availability would be expected from the proposed facilities.

PD040-2

Other

DOE acknowledges the commentor's concern with the safety of the MOX approach, and support of alternative energy sources. 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.

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.

My name is Bruce Frazier. My address: 2012 South East Hemlock Ave, Portland, Oregon 97214. My telephone number: area code 503 238-8665. I'm calling to request a summary of the environmental impact statement on the draft Surplus Plutonium Disposition Environmental Impact Statement. I know a hearing was had here in Portland recently. I did not able to attend, but I want to get a copy of that and prepare written comments. So if you could send that off. Also, I do want to make the comment that I believe that the only safe disposition of excess and surplus plutonium and waste containing high percentages of plutonium is through vitrification and permanent storage. I do not favor any disposition of excess or surplus plutonium or associated nuclear materials through the use of MOX- mixed oxide fuel- or for burning in any kind of reactor or test facility. That's my immediate comment. But please send me the indicated materials. Thank you very much. Good bye.

PD034

PD034-1

Alternatives

DOE acknowledges the commentator'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.

This is my comment: I am against the MOX and would like the money used towards Hanford cleanup. Thank you.

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PD039

PD039-1

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. Furthermore, funds for the surplus plutonium disposition program and environmental cleanup program come from different appropriation accounts allocated by the U.S. Congress that cannot be used interchangeably.

Hi there. This is Jessica Hamilton. I am a resident of Portland. My address is 831 Southwest Vista Avenue, Apartment 302, Portland, Oregon 97205 and I'm calling because I want to make sure that Hanford gets cleaned up and that you do not implement MOX. And I do not want to see you guys burn the weapon's plutonium and use it for commercial nuclear reactors. Thank you very much for the opportunity to comment.

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PD030

PD030-1

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.

**TESTIMONY ON THE SURPLUS PLUTONIUM DRAFT EIS
 BY PAIGE KNIGHT, PRESIDENT OF HANFORD WATCH
 August 18, 1998**

Physicians for Social Responsibility had the courage and foresight years ago to designate radiation pollution as a "national public health and safety emergency" - a kind of creeping Chernobyl, spreading insidiously through our land, our food, our water.

Nuclear waste is continuing to accumulate with nowhere to go. Yucca Mountain, the supposed nuclear waste geological repository, in Native Shoshone land in Nevada, is costing millions upon millions of dollars and is proving to be scientifically unsound; it is not the safe dry place hoped for by politicians and the Nuclear Power Industry.

The Waste Isolation Pilot Project in New Mexico has been delayed once again because it does not yet measure up to the environmental standards deemed protective of public health and safety. Illegal dumping and release of wastes continue world wide into our oceans and into the land and into the sources of our groundwater.

Industry and politicians seek solutions that keep the waste problem --out of sight, out of mind-- in hopes of gaining more short-sighted profit and selfish economic advantage over the masses.

They wave, once again, their biblical prophecies and try to lull us into buying their sacrilegious interpretations of "turning swords into plowshares" only to hide from themselves and us that they will be plowing our fields with more toxic radioactive wastes with half-lives longer than the life of the human race thus far. They may bring about the demise not only of humankind but of planet earth because it is a "good business deal".

What has the nuclear endeavor brought us? Even now, with over eight nations calling for nuclear weapons to be declared illegal, the power struggle wages on with India, Pakistan, Israel, and Iran recently declaring themselves, through the testing of nuclear devices, to be nuclear capable and players at the "big table". The preferred option in this Draft EIS refuses to consider the global picture. The "Peaceful Atom" program has brought us to a point in history where the most deadly substance known to humankind (and created by us as well) is considered more powerful than peace, and more valuable than our gold money standard. This bodes ill for future generations.

Here are some of our "dividends" from the "Peaceful Atom":

- We have over 170 tons of commercial nuclear reactor waste world-wide;
- We have approximately 55,000 tons of "excess" military plutonium in the U.S.
- The U.S. taxpayer has paid between \$5.5 and \$6 trillion for nuclear weapons since 1940.
- Nuclear waste is being considered as an international asset rather than the most deadly waste known to humankind, and proliferation of plutonium and uranium abounds.

Dr. James C. Warf, who worked on the first atomic weapons and was the inventor of the PUREX technology, in recent years has stated that "I have come to learn that there are often large proliferation and other environmental impacts from such endeavors a reprocessing, despite the initial paper proposals that promise smooth operations." We fear more of the same with the stakes becoming even higher in this age of terrorism and lack of moral integrity by the powerful brokers of the nuclear and weapons industry.

The 1988 shutdown of U.S. plutonium production reactors occurred because of several factors:

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ORD01-1

Repositories

DOE acknowledges the commentor's concerns regarding waste management. Radioactive waste cleanup is a DOE priority, and activities conducted under the surplus plutonium disposition program would be coordinated with other ongoing DOE programs including those associated with waste management, as discussed in Section 1.8.2.

ORD01-2

DOE Policy

DOE acknowledges the commentor's views on the surplus plutonium disposition program. The purpose of this proposed action is to safely and securely disposition the 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.

ORD01-3

DOE Policy

In September 1993, President Clinton issued the Nonproliferation and Export Control Policy in response to the growing threat of nuclear proliferation. 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.

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. Toward that end, this SPD EIS analyzes a nominal 50 t (55 tons) of surplus weapons-usable plutonium. In addition to 38.2 t (42 tons) of weapons-grade plutonium already declared by the President as excess to national security needs, the material analyzed includes weapons-grade

the devastating Chernobyl accident of 1986 which led to the discovery of the DOE's reactors' inadequate containment buildings and other essential safety features; citizen's growing knowledge of the serious state of negligence in the nuclear weapons complex; and the reality of the enormous surplus of military plutonium.

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The government has yet to deal with the environmental legacy left by a half of century of weapons production; cleanup is not being adequately dealt with leaving future generations contaminated water resources growing health and safety threats; the wastes that do exist have no safe storage place nor safe containment at this point in time and yet the proposed MOX alternative would add about three million gallons of highly radioactive liquid waste to storage tanks that are already fraught with safety problems. We have not found the will or way to stop the spread of nuclear arms and yet the terrorist acts in our own country and around the world continue to multiply. The plutonium in spent fuel is least likely to be stolen or diverted for violent purposes precisely because it has not been extracted through reprocessing.

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The USDOE is contending that the options are equal in cost; this soft fact does not mesh with the National Academy of Sciences review of the options a few years ago. Their report concluded that the "MOX" option was by far the most expensive option. There has never been a nuclear reactor to my knowledge that has not run far over cost and presented unacceptable safety problems; one of the major safety problems identified by researchers is a greater risk of loss of control during reactor operation. As I have stated before, major concerns of public health and safety and proliferation of nuclear materials have not been adequately addressed. We join with the Hanford community is calling for a new draft EIS, but because all options and all impacts are not fully addressed. We also agree that politics has influenced the options presented to us in the EIS, rather than sound science that should far outweigh even the economics of these proposals. If these decisions are based solely on politics and economics the DOE is once again showing the public that we are expendable—health of the race and the planet means nothing to them.

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I conclude with the following recommendations:

- Place all weapons-usable material that are extracted from leftover materials under international monitoring and safeguards.
- Fully fund improvements of underwater storage of corroding spent fuel, then to interim dry storage.
- Stop all actions and policies that encourage and subsidize the American Nuclear Industry and Russian plans to build a plutonium economy.
- Avoid a plutonium fuel cycle and economy for electrical generation anywhere in the world.
- Base decisions on a rational approach of analyzing truly long-term consequences nationally and globally.
- Limit all current reprocessing that is taking place at Savannah River Site to the legacies of our production years.
- Limit the transport of nuclear materials from one place or country to another.

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Let me close with some pertinent quotes from Senator Mark Hatfield who has long seen through the nuclear myths perpetrated on the public by the spin ministers of the Nuclear Industry:

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ORD01

plutonium that may be declared surplus in the future, as well as weapons-usable, reactor-grade plutonium that is surplus to the programmatic and national defense needs of DOE.

Although the Chernobyl accident of 1986 led to further reviews of DOE's production reactors, it did not lead to the discovery of the inadequacy of containment structures nor the decision to shut down these reactors in 1988.

ORD01-4

DOE Policy

DOE acknowledges the commentator's concerns regarding wastes associated with the MOX approach. Analyses presented in Appendix H indicate that no HLW would be generated by the MOX facility and that all other waste types would be treated, stored, and disposed of in accordance with current site practices and procedures, WMPEIS RODs, WIPPROD, and applicable agreements. Analyses presented in Section 4.28 indicate that the use of MOX fuel in domestic, commercial reactors would not appreciably change the characteristics or quantities of waste generated at the proposed reactor sites. The resulting spent nuclear fuel from these commercial reactors would continue to be managed in accordance with current practice and in a manner required by applicable regulations.

Further, 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.

ORD01-5

Cost

DOE acknowledges the commentator's concern regarding the cost of the MOX approach. 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*

MARK O. HATFIELD

January 14, 1998

Ms. Paige Knight
Hanford Watch
2285 SE Cypress
Portland, OR 97214

Dear Ms. Knight:

Thank you for your invitation to participate in today's Department of Energy hearing on altering the 1989 Hanford Tri-Party Agreement and restarting the Fast Flux Test Facility (FFTF) for the purpose of producing tritium for nuclear weapons. I regret that previous commitments prevent me from attending this critical event.

The persistence by some to exhume nuclear weapons production activities at Hanford never ceases to amaze me. It is shameful enough that the region has not taken steps to close its only operating commercial nuclear reactor, the WNP-2 plant at Hanford, even though an excellent case can be made against it now on purely economic grounds. This abdication of responsibility pales in comparison, however, to the insidious proposal to restart the aging FFTF research reactor for the purpose of producing tritium, a radioactive substance that enhances the destructive capability of nuclear weapons.

It is disappointing that this issue is even being seriously discussed here, a region of the country that has learned the hard way that the price of nuclear technology is much higher than the experts and proponents of nuclear power are ever honest enough to acknowledge. For example, the WPPSS nuclear debacle was one of the greatest economic disasters of the century, and continues to cost the region's electricity customers over \$500 million a year. The Department of Energy was forced to stop lying to the public and close the N Reactor at Hanford in 1988 when it was revealed that hundreds of millions of taxpayer dollars were being wasted producing a product (plutonium) for which there was no critical need. The clean up of the Hanford Reservation will cost hundreds of billions of dollars, take decades to accomplish, and continue to threaten human health and safety. The Trojan nuclear power plant in Oregon was closed because it was uneconomic, and still awaits decommissioning.

Considering all this, how could any rational person or bureaucracy consider adding to the nuclear misery already visited upon the Pacific Northwest? How many lessons do we have to learn before we turn away from the broken promises of nuclear myths? Hanford already is the

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(DOE/MD-0009, July 1998), which analyzes the cost and schedule 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 discuss the potential environmental impacts of operating Catawba, McGuire, and North Anna, the reactors that would use the MOX fuel.

ORD01-6 General SPD EIS and NEPA Process

This SPD EIS presents the potential impacts on public health and safety of each of the alternatives considered in the document. The text reflects DOE's efforts to carefully collect comparable data on all of the alternatives, analyze those data in a consistent manner using well-recognized and accepted procedures, and present the results in a full and open manner. The range of reasonable alternatives was established using the screening criteria listed in Section 2.3.1 and public input. 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.

ORD01-7 DOE Policy

International inspections would take place throughout the surplus plutonium disposition process, starting at the end stages of the pit disassembly and conversion process. Section 2.4 discusses the sensitive negotiations taking place between the United States and Russia to implement international inspections. Spent fuel storage would take place at the commercial reactors that use the MOX fuel. Spent fuel onsite at the reactors has been and continues to be safely stored. These reactors are regulated by NRC.

Use of MOX fuel in commercial reactors is not proposed to subsidize the commercial nuclear power industry or produce electricity. As discussed in response ORD01-2, the purpose of this proposed action is to safely and securely disposition surplus plutonium by meeting the Spent Fuel Standard.

Ms. Paige Knight
January 14, 1998
Page 2

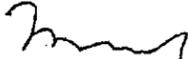
greatest environmental threat to the people of the Pacific Northwest. Restarting any nuclear reactor for weapons production purposes is misguided at best, and transparently evil, at worst. It also is a clear violation of the spirit and intent of the Tri-Party Agreement and a complete reversal of our focused mission over the last 20 years to clean up the largest environmental disaster area in the Nation.

Long ago the Northwest made decisions that turned us away from nuclear production of weapons material and electricity. It is time again to reject the sermons of the nuclear proselytizers and say no to those who preach death, destruction and ruin to our world and the region.

I commend you for your continued commitment to protecting the people and the environment of the Pacific Northwest. Do not hesitate to let me know if I can be of further service to your endeavors.

With kind regards,

Sincerely,



Mark O. Hatfield

ORD01

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.

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. Furthermore, 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.

Transportation of special nuclear materials 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. As discussed in Section 2.3.1, minimizing transportation was a consideration in developing the alternatives.

The proposed action does consider national and global long-term consequences of removing 50 t (55 tons) of plutonium considered surplus from both U.S. and Russian stockpiles. Decisions on the U.S. surplus plutonium disposition program will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input.

ORD01-8

DOE Policy

DOE acknowledges the commentator's quotes from Senator Mark Hatfield.

The U.S. Department of Energy needs to hear you voice NOW!
What do you think about a new era of nuclear proliferation?

Hanford Action of Oregon will forward this questionnaire to USDOE. Please circle your responses.

1. Should clean-up be the sole mission at Hanford? 1
 Yes No
2. Should the United States government maintain its longstanding policy opposing the use of weapons plutonium to fuel civilian nuclear reactors? 2
 Yes No
3. Should commercial nuclear reactors be allowed to run on MOX fuel containing weapons-grade plutonium? 3
 Yes No
- 3a. Should they be subsidized with tax dollars to do so? 3
 Yes No
4. Which alternative would you prefer to see the U.S. Department of Energy pursue: 4
 Immobilization (encasement of plutonium in glass logs or in canisters for entombment) *although I don't have confidence in the entombing materia*
OR
 The MOX plan (processing plutonium into fuel for use in civilian nuclear reactors).
5. How concerned are you about the transportation of plutonium through the Northwest to Hanford? 5
Not concerned Slightly Concerned Very Concerned Completely opposed
6. How concerned are you about transporting plutonium MOX fuel through the Northwest to Hanford? 6
Not concerned Slightly Concerned Very Concerned Completely opposed
7. Should MOX fuel be used to restart the Fast Flux Test Facility (FFTF), a risky liquid-metal reactor at Hanford, to produce tritium for nuclear bombs? 6
 Yes No

Name Gretchen Janzon
Address 2223 NE 57th Ave. PDX OR 97213
Phone _____ e-mail _____

Please return to Hanford Action of Oregon by September 10, 1998.
Hanford Action of Oregon
25-6 NW 23rd Pl #406 tel: (503) 235-2924 fax: (503) 736-0097 e-mail: hanac@aol.com

MD227

MD227-1**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.

MD227-2**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.

MD227-3**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.

MD227-4

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.

Under the hybrid approach, 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. DOE has determined that 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. Therefore, fabricating all 50 t (55 tons) of surplus plutonium into MOX fuel is not a reasonable alternative and is not analyzed; however, immobilizing all of the surplus plutonium is analyzed. Given the variability in purity of the surplus plutonium to be dispositioned, some of the plutonium currently considered for MOX fuel fabrication may also need to be immobilized. The incremental impacts that would be associated with a small shift in materials throughput are discussed in Section 4.30.

Testing is underway to confirm that the immobilized plutonium would meet the performance criteria for disposal in a potential geologic repository pursuant to the NPWA.

MD227-5**Transportation**

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, 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>.

MD227-6**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.

The U.S. Department of Energy needs to hear you voice NOW!
What do you think about a new era of nuclear proliferation?

Hanford Action of Oregon will forward this questionnaire to USDOE. Please circle your responses.

1. Should clean-up be the sole mission at Hanford? *do you mean burying this?* 1
Yes No
2. Should the United States government maintain its longstanding policy opposing the use of weapons plutonium to fuel civilian nuclear reactors? *if this has already been so - why do we have so much to dispose of?* 2
Yes No
3. Should commercial nuclear reactors be allowed to run on MOX fuel containing weapons-grade plutonium? *why are we producing this material?* 3
Yes No
- 3a. Should they be subsidized with tax dollars to do so? *no wonder that Iran does not want to cooperate!* 4
Yes No
4. Which alternative would you prefer to see the U.S. Department of Energy pursue:
Immobilization (encasement of plutonium in glass logs or in canisters for entombment) OR
 The MOX plan (processing plutonium into fuel for use in civilian nuclear reactors). *But this is ultimately very dangerous.* 5
5. How concerned are you about the transportation of plutonium through the Northwest to Hanford?
Not concerned Slightly Concerned Very Concerned Completely opposed 5
6. How concerned are you about transporting plutonium MOX fuel through the Northwest to Hanford?
Not concerned Slightly Concerned Very Concerned Completely opposed 6
7. Should MOX fuel be used to restart the Fast Flux Test Facility (FFTF), a risky liquid-metal reactor at Hanford, to produce tritium for nuclear bombs? *if it was not too risky to develop - then keep it there.*
Yes No

Name Rose Mary Joslin
Address 3134 NE 62nd
Phone 503-282-8050 e-mail _____

Please return to Hanford Action of Oregon by September 10, 1998.

Hanford Action of Oregon
25-4NW 23rd Pl. #406 tel: (503) 235-2924 fax: (503) 736-0097 e-mail: haction@sol.com

MD299

MD299-1

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.

MD299-2

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.

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.

MD299-3**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.

MD299-4**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.

Under the hybrid approach, 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. Therefore, fabricating all 50 t (55 tons) of surplus plutonium into MOX fuel is not a reasonable alternative and is not

analyzed; however, immobilizing all of the surplus plutonium is analyzed. Given the variability in purity of the surplus plutonium to be dispositioned, some of the plutonium currently considered for MOX fuel fabrication may also need to be immobilized. The incremental impacts that would be associated with a small shift in materials throughput are discussed in Section 4.30.

MD299-5

Transportation

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, 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>.

MD299-6

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.

Kathleen Juergens
3229 NE 7th Ave.
Portland, OR 97212

TESTIMONY GIVEN AT USDOE PUBLIC HEARING
August 18, 1998
Portland, Oregon

My name is Kathleen Juergens, and I'm a working person who lives in Northeast Portland. I'm here on behalf of myself, and I'm also here in solidarity with all the other people of our region of Cascadia, and all my sisters and brothers throughout the rest of the country.

I am not here to debate the DOE's plan to convert surplus plutonium into so-called "MOX fuel" and burn it in commercial reactors. We all know this is a bad idea. We all know there is not one shred of evidence that the MOX fuel plan will provide us with safe and useable energy, or a sustainable source of jobs, or even with a method of disposing of plutonium! We all know that the MOX plan will leave us with far more hazardous radioactive waste in our communities than we had before. We all know that the MOX plan will cost far more than vitrification, and will pump many more billions of our hard-earned tax money into the nuclear welfare state. We all know that NOBODY stands to benefit from this insane plan except a handful of rich nuclear industrialists. We know all these things, and DOE knows them too.

I am not here to beg and plead and ask nicely: Please stop poisoning the air and the water. Please stop giving us cancer. Please stop creating more lethal radioactive waste. Please stop threatening us with nuclear annihilation. Here in the Northwest, we are way past "please." We have asked nicely, and DOE has not listened.

No, I am here to express my OUTRAGE at the fact that I have to be here at all. At the fact that, after hearing loud and clear, over and over again, from almost everybody in the Northwest, that this nuclear nightmare in our backyard has got to end, the DOE comes back to us yet again, with yet another plan that insults our intelligence and assaults our spirits. I am outraged that anybody ever THOUGHT about abandoning the cleanup mission at Hanford. If anybody at DOE had ever listened to the people of the Northwest--or cared at all for our health, our livelihoods, our survival--this MOX plan would never have been proposed in the first place. This whole hearing is an outrage.

I am here to DEMAND that the MOX plan be withdrawn. We do not want MOX here at Hanford. We do not want MOX at Savannah River, South Carolina. We do not want MOX anywhere. Vitrification is not a wonderful alternative, but it's the best thing we've come up with so far for temporarily dealing with--not solving--the problem of plutonium disposal. The MOX plan is nothing but an outrage. Withdraw it, and withdraw it NOW!

Page 1 of 1

ORD05

ORD05-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition. 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.

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.

 **Question/ Information Request Card**

Name: MAURA McLOUGHLIN
Address: PO. Box 22946
PORTLAND OR 97269
Phone: 251-4928 Fax: _____
E-mail: _____
Question/ Request: Re: Surplus Plutonium Report
I would like it stated way down,
I found it extremely nebulous,
Also; I found the tables general flawed
Professional rather than the Public

For further information contact:
U.S. Department of Energy, Office of Fissile Materials Disposition, MD-4
Forrestal Building, 1000 Independence Ave., SW, Washington, D.C. 20585
1-800-820-5155

ORD15

ORD15-1

General SPD EIS and NEPA Process

DOE has and will continue to work toward the goal of presenting technical information, in writing or verbally, in readily understandable language and avoid the use of jargon (technical slang). Specifically, our aim is to provide information at a high school comprehension level. Because the disposition of surplus plutonium is a technically complex program, we must use some scientific and technical terms in order to accurately describe how DOE proposes to dispose of surplus plutonium, and the environmental effects of taking those actions. For further clarification of the issues addressed in this SPD EIS, duplication of information is eliminated where possible, and various reader aids (e.g., a glossary, a list of acronyms, a metric conversion chart) are incorporated.

Thank you for sending me
the report, I look in future
for a report general toward
the public.

Thank you again,

Maura McLaughlin

OFD15

 **United States
Department
of Energy** *Comment Form*

NAME: (Optional) Nancy Metrick
ADDRESS: 2831 NW Johnson #3 Portland, OR 97209
TELEPHONE: (503) 221-9480
E-MAIL: _____

I DO NOT WANT MOX /
PERIOD /

[Signature]

ORD13

ORD13-1

MOX Approach

DOE acknowledges the commentator'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. 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. 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.

Yes, my name is Dr. Martin Donahoe. I'm a physician on faculty at Oregon Health Sciences University, interested in environmental issues and I teach these issues to both our medical students and our internal medicine residents and I wanted to weigh in with my opinion against the MOX, mixed oxide, fuel approach to using plutonium and uranium in reactors. I certainly would favor the other option being immobilization which would be less expensive, safer for the environment and also send a message to Russia and the rest of the world that we think of plutonium more as a, a dangerous waste product that it is rather than a source of energy. My number is (503) 494-6495. Thank you.

1

PD063

PD063-1

Alternatives

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 nuclear weapons again.

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. As described in Chapter 4 of Volume I and summarized in Section 2.18, potential impacts of any of the proposed activities would likely be minor. 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.



Oregon
 Jeff A. Kitzhaber, M.D., Governor

Department of Consumer and Business Services
 Office of Energy
 625 Marion St. NE
 Salem, OR 97310-0830
 Phone: (503) 378-4060
 Toll Free: 1-800-221-8035
 FAX: (503) 373-7806
 Web site: www.cbs.state.oregon.gov/external/oeo/

September 9, 1998

Mr. Howard R. Canter
 Acting Director
 Office of Fissile Materials Disposition
 US Department of Energy
 PO Box 23786
 Washington, DC 20026-3786

Re: Oregon Office of Energy's Comments on Surplus Plutonium Disposition Draft Environmental Impact Statement

Dear Mr. Canter,

Thank you for the opportunity to comment on the Surplus Plutonium Disposition Draft Environmental Impact Statement (EIS). The citizens of the State of Oregon are vitally interested in this issue from both a regional and international perspective.

Our most urgent concerns are:

Hanford has been described as the most contaminated site in the Western Hemisphere. A review of table 2-4 in the EIS also shows that in nearly all cases, siting any portion of the surplus plutonium mission at Hanford results in a measurably greater human health risk than conducting the mission at another site. As a result, we recommend that cleanup remain Hanford's only mission and Hanford not be considered for any task related to surplus plutonium disposition. 1

The use of Mixed Oxide (MOX) fuel in the Hanford Fast Flux Test Facility reactor or in any other Department of Energy or commercial reactor to produce tritium for nuclear weapons represents a weapons use of surplus weapons plutonium and must not be considered as an option. This appears to violate the spirit of our agreement with the Russians to remove this plutonium from the weapons cycle. 2

The EIS does not consider the environmental impacts of burning MOX fuel in commercial reactors as part of the MOX option. Until these impacts are analyzed, it is impossible to make a rational choice between the hybrid alternative and the total immobilization alternative. 3

The EIS assumes a geologic repository for immobilized plutonium will be available. The validity of this assumption is highly suspect. The completion of work on Yucca Mountain has been delayed time and time again and there is no reason to anticipate any 4

MD170

MD170-1

Alternatives

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. Although there may be differences in human health risk factors between the sites, the differences are not large enough to be a discriminating factor in the decisionmaking process. DOE will continue to consider Hanford for surplus plutonium disposition or other programs that are compatible with the Hanford mission.

MD170-2

DOE Policy

DOE acknowledges the commentator's opposition to using MOX fuel in DOE or commercial reactors to produce tritium for nuclear weapons. 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. Furthermore, MOX fuel in domestic, commercial reactors would not be used to produce tritium.

MD170-3

MOX Approach

The SPD Draft EIS used a generic reactor analysis because the specific reactors had not yet been identified. DOE conducted a procurement process to acquire MOX fuel fabrication and irradiation services. As a result of this procurement process, DOE identified the reactors proposed to irradiate MOX fuel as part of the proposed action in this EIS. Section 4.28 discusses the potential environmental impacts of operating the reactors, should the decision be made to proceed with the hybrid approach (i.e., immobilization and MOX fuel fabrication).

MD170-4

Repositories

This SPD EIS assumes, for the purposes of analysis, that Yucca Mountain, Nevada would be the final disposal site for all immobilized plutonium and MOX spent fuel. As directed by the U.S. Congress, through the NWPA, as amended, Yucca Mountain is the only candidate site currently being characterized as a potential geologic repository for HLW and spent fuel.

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improvement in this performance. We recommend an analysis be done to determine the effects of long term storage of the immobilized plutonium at the candidate sites. 4

The EIS analyses of the radiological consequences of accidents, construction and normal operations of the facilities proposed for Hanford under the various options were limited to a radius of 50 miles centered on Hanford. The presence of the Columbia River on the Hanford Site and the River's proximity to the major population centers of Oregon makes Hanford's situation unique. We recommend the analysis of radiological consequences be extended down the Columbia River at least to the John Day Dam. 5

Attached are further specific comments on the EIS. Should you have any questions, please contact Douglas Huston of my staff at (503)378-4456.

Sincerely,



Mary Lou Blazek
 Administrator, Nuclear Safety Division
 Oregon Office of Energy

cc: Ms. Donna Powauke - Nez Perce Tribe
 Mr. J. R. Wilkerson - CTUIR
 Mr. Michael Wilson - Washington Ecology
 Mr. Douglas Sherwood - EPA
 Mr. Russell Jim - Yakama Nation

MD170

DOE has prepared a separate EIS, *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), which analyzes the environmental impacts from construction, operation and monitoring, related transportation, and eventual closure of a potential geologic repository. 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) includes an analysis of the impacts of the long-term storage of 21,600 canisters of vitrified HLW. As described in Section 2.4.2, if all surplus plutonium were immobilized, the surplus disposition program would produce an additional 272 canisters using the ceramic process or 395 canisters using the glass process. For the hybrid approach, these totals are reduced to 101 canisters (ceramic) and 145 canisters (glass), respectively. Accordingly, potential impacts associated with storage of these canisters are not significant when compared with the much larger bases for analyses noted above.

MD170-5

Human Health Risk

Both DOE and NRC evaluate radiological impacts to the population out to a distance of 50 miles (80 kilometers) from a site. This distance was first specified in Paragraph D, Section II of Appendix I to 10 CFR 50. It had been determined that essentially all of the dose to the population would be received within this 50-mi (80-km) radius. Further, predictions of atmospheric dispersion beyond this distance are not accurate because of changes in wind direction and speed that take place over time and distance from the points of radiological releases.

There are not expected to be any liquid radioactive discharges as a result of normal surplus plutonium disposition activities at Hanford. If there were, due to the dilution capability of the Columbia River, as well as FMEF's distance from the Columbia River, there should be no discernible contamination of aquatic biota (fish) or drinking water resulting from surplus plutonium disposition activities at Hanford, either from minute quantities of air deposition into the Columbia River or from any potential wastewater releases. Therefore, it is estimated that no measurable component of the public dose would be attributable to liquid pathways.

Oregon Office of Energy Comments on the Surplus Plutonium Disposition Draft Environmental Impact Statement.
 Page 1 of 5

- Section 1.1. Background, reserves the CANDU option for burning of Mixed Oxide (MOX) fuel. The Oregon Office of Energy opposes this based on recently revealed technical and financial problems associated with the CANDU reactors and increased proliferation risks. 6
- Section 1.5 states that the Department Of Energy (DOE) is deferring the examination of the impacts and costs of final shutdown, cleanup and demolition of these facilities to some later Environmental Impact Statement. It is essential that these factors be considered in this Environmental Impact Statement in order to make an informed, reasonable analysis of the various options. 7
- Section 1.7 asserts that waste will be disposed in accordance with decisions reached in various Records of Decision issued for the Waste Management Programmatic Environmental Impact Statement. This document was widely criticized for its inadequacy and we recommend that in making decisions concerning the fate of surplus plutonium disposition waste DOE take these criticisms into account. 8
- In Section 2.3.1, Development of Facility Siting Alternatives, the criteria used to reduce possible facility and site combinations do not contain waste capacity/handling criteria. Would the site be able to handle and accommodate the amount and types of waste expected to be generated by these processes? We recommend that these criteria be added and the various candidate sites evaluated against them. 9
- In several places, the Surplus Plutonium Disposition Environmental Impact Statement (EIS) contains statements about designing facilities to withstand natural phenomena such as earthquakes and tornadoes. Specifically what design criteria will be used, the Nuclear Regulatory Commission's (NRC), DOE's, state, or commercial standards? The Oregon Office of Energy recommends that the criteria to be used be specifically stated in the EIS. At a minimum, these standards should be set to the most conservative of the standards specified by the DOE, NRC, or commercial standards. 10
- The EIS also does not discuss what general building and fire codes will be used in the construction of the various proposed facilities. These issues need to be discussed in the EIS. The EIS should specify compliance with the appropriate state and national codes. 11
- For Hanford, the current Tank Waste Remediation System (TWRS) Privatization Contract does not include provisions for surplus plutonium disposition canister filling as described in Section 2.4.2.2.2, Immobilization Process. The impacts of this strategy on the TWRS Privatization contract should be evaluated and discussed. 12

MD170

MD170-6

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 Draft 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 Russian's disposition capability, shipments of the Russian MOX fuel would take place directly between Russia and Canada.

MD170-7

General SPD EIS and NEPA Process

D&D is discussed in Section 4.31. DOE will evaluate options for D&D or reuse of the proposed facilities at the end of the surplus plutonium disposition program. At that time, DOE will perform engineering evaluations, environmental studies, and further NEPA review to assess the consequences of different courses of action. 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

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rooms at the following locations: Hanford, INEEL, Pantex, SRS, and Washington, D.C.

MD170-8 **Waste Management**

The statement that waste would be disposed of in accordance with decisions reached in the various WM PEIS RODs was included in this SPD EIS to assure the reader that waste management activities would be handled in a manner consistent with the larger decisions being made in the WM PEIS. Comments on the WM PEIS are beyond the scope of this SPD EIS.

MD170-9 **Waste Management**

Impacts to waste management from the various alternatives for surplus plutonium disposition are described in the Waste Management sections in Chapter 4 of Volume I and Appendix H. None of the proposed alternatives would be expected to generate wastes that exceed current site capabilities with the exception of LLW and TRU waste at Pantex as described in the Pantex waste management sections (e.g., see Section 4.17.2.2). Decisions on the surplus plutonium disposition program will be based on environmental analyses (including analyses of waste management impacts), technical and cost reports, national policy and nonproliferation considerations, and public input.

MD170-10 **Facility Accidents**

As described in Appendix K.1.3.2, the proposed facilities for surplus plutonium disposition would be expected to meet or exceed the requirements of DOE Order 420.1, *Facility Safety* (October 1995), and *Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities* (DOE-STD-1020-94, April 1994), and for new construction, NRC requirements, as appropriate. For example, the MOX facility would meet the NRC requirements.

MD170-11 **Infrastructure**

As stated in Section 5.1, it is DOE's policy to conduct its construction and operation activities in an environmentally safe manner in compliance with all applicable Federal, State, and local statutes, regulations, and standards.

MD170-12

Immobilization

As discussed in Section 2.4.2.2.2, DOE anticipates that the use of the HLW vitrification plant at Hanford to fulfill plutonium disposition requirements would likely result in minor impacts to the operations of the TWRS contractor. Additional provisions would primarily be in the form of increased worker shielding requirements, and any necessary changes to the planned TWRS facility design would be made prior to construction. Programmatically, although several hundred additional canisters would need to be produced to support the surplus plutonium disposition program, this would represent a relatively small increase to the more than 10,000 canisters already anticipated to be produced over the course of the Hanford HLW mission. Further, no additional vitrified HLW would be needed to accomplish immobilization activities at Hanford.

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There is no indication in this EIS that DOE will develop a comprehensive transportation plan in consultation with the appropriate corridor states and local tribes. We recommend that a comprehensive transportation plan be developed and that a statement to this effect be included in the EIS. 13

The EIS does not adequately discuss the technical properties of the immobilized plutonium. For example: What is the amount of plutonium in each unit of immobilized plutonium and how does this relate to a possible critical mass? How much shutdown margin does the immobilized waste form provide? We recommend that a discussion of the physical and nuclear properties of the immobilized plutonium be included in the EIS. 14

Section 2.4.3.1, MOX Facility Description, contains specific design details not included in the Statement of Work for the Request for Proposals for MOX Fuel Fabrication and Reactor Irradiation Services. These documents need to be reconciled. 15

The area required for various missions at Hanford seems to vary widely. For example: For immobilization, alternative 4b requires 6,698 square meters, and alternative 4a requires 13,694 square meters for the identical mission. These figures need to be clarified. 16

Further, alternative 6a states that 14,000 square meters is 150,700 square feet, and alternative 6b states that 14,000 square meters is 146,400 square feet. Actually 146,400 square feet is about 13,000 square meters. These figures need to be corrected. 16

Section 2.17.1, Process Description, states that about 100 kilograms of plutonium would be converted to MOX fuel from 321 kilograms of plutonium total. This varies significantly from the statement in the EIS Summary page S-19 that states that 100kg of plutonium would be converted to MOX from 600 kilograms of plutonium total during lead assembly fabrication. This discrepancy must be addressed. 17

The table on page 3-1 titled "Selected Characteristics of the Candidate Sites for Surplus Plutonium Disposition Facilities," does not contain units for the various numbers presented. These should be included. 18

The footnotes to Table 3-1 state that no sources of lead emission have been identified at Hanford. However, lead contaminated soil has been identified in the 300 Area burial ground. The source of this lead should be identified and a determination should be made if this soil or the source of its contamination constitute a lead emission source. 19

MD170

MD170-13

Transportation

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 WM PEIS and *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>.

MD170-14

Immobilization

Section 2.4.2.2.2 discusses the immobilization process and states that between 26 kg (58 lb) and 28 kg (61 lb) of plutonium would be present in the canisters that would be sent to a potential geologic repository. These estimates are based upon each canister containing 28 individual cans of plutonium-ceramic (with each can containing a plutonium loading of 10 percent by weight), or 20 cans of plutonium-glass (with each can containing a plutonium loading of 8 percent by weight). Numerous R&D studies of the immobilized plutonium forms have been conducted by DOE and the national laboratories, in part to ensure all environmental, health and safety requirements are met including criticality repository performance concerns. Several technical studies continue. In order to avoid the possibility of a criticality, neutron absorbers are incorporated into the fabrication of the plutonium-ceramic or plutonium-glass. Evaluations of the immobilized forms under a range of potential repository conditions, including if the material were in a degraded state and exposed to water, have been conducted. All have indicated that the occurrence of a criticality would be extremely unlikely given the amounts of plutonium relative to the amounts of neutron-absorbing materials that would be present.

“Shutdown margin” is a term generally used in association with controlling the reaction in a nuclear reactor and it is not applicable to the immobilization process; as such this parameter has not been analyzed relative to the immobilized form.

For enhanced readability of this SPD EIS, supporting documentation and detailed analyses of the chemical, physical, and nuclear properties of the immobilized forms were published separately. Information on specific technical aspects of the immobilized forms can be found in the following documents: (1) the immobilization data reports published in conjunction with this SPD EIS; (2) *Report on Evaluation of Plutonium Waste Forms for Repository Disposal* (DI: A-00000000-01717-5705-00009, Rev. 00A, March 1996); (3) *Report on Intact and Degraded Criticality for Selected Plutonium Waste Forms in a Geologic Repository, Volume II: Immobilized in Ceramic* (DI: BBA000000-01717-5705-00020, Rev. 01, October 1998); (4) *Immobilization Technology Down-Selection Radiation Barrier Approach* (UCRL-ID-127320, May 1997); and (5) *Fissile Material Disposition Program Final Immobilization Form Assessment and Recommendation* (UCRL-ID-128705, October 1997). These documents are available to the public at DOE sites and regional reading rooms; the latter two are also available on the MD Web site at <http://www.doe-md.com>.

MD170-15

MOXRFP

Section 2.4.3 contains information from supporting technical reports that show how the MOX facility would be constructed and operated at each candidate site. Those supporting reports, the SPD Draft EIS, and other relevant documents were made available to the prospective bidders during the MOX procurement process. There was no need to duplicate all the information in both the SPD EIS and the MOX RFP. This EIS has been revised to include information received and analyzed during the MOX procurement. Section 4.28 discusses the potential environmental impacts of operating the reactors that would use the MOX fuel.

MD170-16

Alternatives

The amount of space for the immobilization facility in FMEF differs depending on how it is configured—alone (Alternative 4A) or collocated with either the

pit conversion or MOX facility (Alternative 2 or 4B, respectively). Sections 2.6, 2.8, 2.12, and 2.15.1 were revised to discuss the revision in the size projections for the immobilization facility; the facility is larger than as characterized in the SPD Draft EIS, and when collocated in FMEF with either of the other two proposed facilities, requires an additional annex. Total space requirements still differ somewhat due to the amount and location of space available in FMEF and how the functions can be accommodated within the available space.

The editorial error in the conversion between square meters and square feet was corrected.

MD170-17**MOX Approach**

DOE cannot find this discrepancy in the SPD Draft EIS. Both Section 2.17.1 and page S-19 of the *Draft Summary* make the same statement that about 100 kg (220 lb) of plutonium would be made into MOX fuel each year, using a total quantity of 321 kg (708 lb) of plutonium.

MD170-18**Candidate Sites**

The subject table, Selected Characteristics of the Candidate Sites for Surplus Plutonium Disposition Facilities, contains units for the numbers presented. As shown in the column titles, areas are in square kilometers (km²), populations are in number of people, MEI doses are in millirems (mrem), and population doses are in person-rem.

MD170-19**Candidate Sites**

Table 3-1 addresses general regions of influence for the affected environment and does not have footnotes. Table 3-3, Comparison of Ambient Air Concentrations From Hanford Sources, describes process emissions and does not include possible existing lead contamination of soils. The condition of a burial ground in the 300 Area is beyond the scope of this SPD EIS. This comment has been forwarded to the Richland Operations Office.

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Although a partial failure of the Grand Coulee dam is discussed in Section 3.2, there is no discussion of any type of failure of the Priest Rapids Dam which is immediately upstream of Hanford. We recommend that a discussion of this failure, or whether its consequences are bounded by the Grand Coulee failure, be included in this document.	20
Section 3.2.1.2.1, General Site Description, Page 3-8, second paragraph, discusses peak and off-peak noise levels along the major automobile traffic routes near the Hanford site. The peak noise level is described as 62 dBA, and the off-peak at 70dBA - this would appear to be backwards.	21
The Regional Economic Area (REA) defined in Section 3.2.3, Socioeconomics, is too small. The presence of the Columbia River on the Hanford Site and the potential impacts of Hanford operations on the one million Oregonians who live downstream along this River make Hanford a unique case. The REA should be expanded to include those areas in Oregon along the Columbia River.	22
Section 3.2.7, Water Resources, does not discuss Hanford's vadose zone contamination problems. A discussion of these should be included in this section.	23
Figure 3-8 shows a "West Pond." Section 3.8.1.1 refers to a "West Lake." These names should be consistent.	24
Section 3.2.9, Cultural and Paleontological Resources, refers to the "Cultural Resources Management Plan," (Batelle 1989). This document was found unacceptable by the Yakama Nation and is currently being re-written. Any decisions made based on this document must be re-visited once the new document is complete.	25
Section 4.2.11.1 states that the cultural and paleontological aspects of continued storage of plutonium under the no-action alternative would be independent of the proposed action. This is logically inconsistent. This statement needs to be clarified.	26
Section 4.2.13.1 does not discuss the need for more and more extensive maintenance on facilities at Hanford as they age under the no-action alternative. We recommend that this aspect of the no-action alternative be evaluated and formally discussed in the EIS.	27
Section 4.3, Alternative 2, does not discuss the impact on Hanford's high level waste of using the High Level Waste Vitrification (HLWV) Plant for part of the immobilization process. It would reasonably be expected to impact the processing schedule, which would leave wastes in the tanks longer and constitute an increased risk. We recommend that this aspect of Alternative 2 and all other alternatives that involve use of the HLWV Plant be evaluated and discussed.	28

MD170

MD170-20

Facility Accidents

The analysis that postulates a partial failure of the Grand Coulee Dam also assumes the failure of all subsequent downstream dams as a result of the influx of water caused by the postulated Grand Coulee failure. This bounds the hazard from a postulated failure of the Priest Rapids Dam alone. Details of the analysis can be found in the documents referenced in Section 3.2.7.

MD170-21

Air Quality and Noise

Section 3.2.1.2.1 was clarified to state that both the peak and offpeak equivalent sound levels (1 hr) from State Route 24 were 62 dBA, and both the peak and offpeak equivalent sound levels (1 hr) from State Route 240 were 70 dBA.

MD170-22

Socioeconomics

Hanford is located in the Richland/Kennewick/Pasco, Washington economic area, which was delineated by the DOC's Bureau of Economic Analysis. An economic area is defined by one or more economic nodes (metropolitan areas or similar areas that are centers of economic activity) and the surrounding counties that are economically related to the nodes. Commuting patterns play a major factor in defining the economic areas.

MD170-23

Water Resources

The vadose zone contamination largely occurs beneath the HLW tanks in the 200 Area. The construction and operation of the HLW Vitrification Facility are described in the *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement (DOE/EIS-0189, August 1996)*. Although the proposed immobilization approach would use the vitrification plant in the 200 Area, it is not expected to contribute to any vadose zone contamination.

MD170-24

Water Resources

Figure 3-8 was revised to read "West Lake."

MD170-25

Cultural and Paleontological

DOE acknowledges the commentator's concerns regarding cultural resources management. The concerns of the Yakama Indian Nation over the effects of

any surplus plutonium disposition activities at Hanford would be taken into account during government-to-government consultation conducted by DOE with the tribe in accordance with Federal laws, treaties, and agreements. Cultural resources management activities related to the surplus plutonium disposition program conducted at the site would be performed in accordance with the most current Hanford Cultural Resources Management Plan. The Yakama Indian Nation was contacted by letter in October 1998 as shown in Appendix O. To date, a response has not been received.

MD170-26 Cultural and Paleontological

Section 4.2.11 was revised to clarify that any impacts to cultural and paleontological resources from the continued storage mission under the No Action Alternative would be addressed through ongoing regulatory compliance procedures and consultations as described in the *Storage and Disposition PEIS*.

MD170-27 Infrastructure

The planned completion date for the Hanford site cleanup is 2046 as described in *Accelerating Cleanup: Paths to Closure* (DOE/EM-0362, June 1998). Therefore, maintenance of the site infrastructure would be provided to support Hanford's cleanup mission during this period, regardless of decisions related to surplus plutonium disposition. Impacts associated with providing continued surveillance and maintenance are beyond the scope of this SPD EIS. Surplus plutonium disposition activities, including D&D, are expected to be completed by 2019, which is well before the site is expected to be cleaned up in 2046.

MD170-28 Immobilization

The use of the HLW facility for canister filling would not be expected to seriously impact the schedule for processing Hanford tank wastes because the canisters with surplus plutonium would feed directly into the line and would make up a small percentage of the total number of HLW canisters that need to be vitrified.

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Tables 4-55 and 4-56 should be labeled to indicate which table presents Hanford data and which table is for Pantex.	29
The Hanford and Pantex statistics in Table 4-57 should be separated in the table for easier reference even though clarification is available in the paragraph following the table.	30
Noise impacts on wildlife are not consistently discussed from alternative to alternative. We recommend that discussions of these impacts be included in all alternatives.	31
The EIS assumes that the Waste Isolation Pilot Plant (WIPP) will be open on schedule. Recent events suggest that this might not be the case. We recommend that the impact of a 1-year delay in the opening of WIPP be evaluated and its impact on all the alternatives discussed.	32
The facility accidents sections of each alternative do not contain any discussion of possible synergistic effects of accidents in buildings where more than one processing function is in progress. For example, Alternative 6b: Pit Conversion and MOX co-located in the Fuels and Materials Examination Facility at Hanford. We recommend that this discussion be included in this section for all alternatives that involve co-located facilities.	33
Section 4.32 does not include the Groundwater/Vadose Zone/Columbia River integration project at Hanford as a reasonably foreseeable action. We recommend that this be included and evaluated.	34
Section J.1.1.5, Other Computational Assumptions, states that ground surfaces were assumed to have no previous deposition of radionuclides. This statement needs to be clarified for Hanford since there is a large amount of currently contaminated ground surface on the Hanford Site.	35
Table K-1 should include units for the values listed.	36
Section K.14.2, Modeling of Dispersion of Releases to the Environment, makes the statement that ingestion pathways have been studied and found not to contribute as significantly to dosage as inhalation. This is not necessarily true if you consider the Native American Subsistence Scenario. We recommend that this assumption be re-evaluated.	37

MD170

MD170-29

Waste Management

The titles for Tables 4-46 and 4-47 already contain the name of the site for which the impact data are presented. Table 4-46 provides the potential waste management impacts of construction at Pantex; Table 4-47, the corresponding impacts at Hanford.

MD170-30

Socioeconomics

DOE acknowledges the commentor's request for clarification. The data for Hanford and Pantex in Table 4-48 are already separated. The "Pit Conversion" column contains the Pantex data; the "Immobilization" and "MOX" columns, the Hanford data. The title of Table 4-48 indicates that the data are for pit conversion at Pantex and immobilization and MOX at Hanford.

MD170-31

Ecological Resources

The Ecological Resources portions of Section 4.26 were revised to make the discussions of potential noise impacts on wildlife more consistent. The Air Quality and Noise sections in Chapter 4 of Volume I discuss the noise impacts for each of the candidate sites, which would bound the impacts for each of the alternatives at each particular site. No Federally listed threatened or endangered species or their critical habitats would be affected because, with the exception of SRS, none have been sighted on or near the proposed site locations. At SRS, the American alligator has been observed near F-Area, but its occurrence there is seen as uncommon. Noise impacts on ecological resources would be of short duration and would likely be minor for each alternative.

MD170-32

Waste Management

This SPD EIS did not assume that WIPP would open on schedule. However, 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 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.

MD170-33

Facility Accidents

Synergistic effects become significant when accidents at multiple facilities can affect the same receptor (person or location). For the proposed surplus plutonium disposition facilities, synergistic effects were taken into account for seismic events (i.e., design basis or beyond-design-basis earthquakes). The synergy here is due to the common cause initiator (i.e., seismic ground motion). This is accounted for by summing population doses and LCFs for these scenarios for facilities located at the same site. This analysis is presented in the Facility Accidents sections in Chapter 4 of Volume I. Doses for the MEI were not summed because an individual would only receive a summed dose if he or she were located along the line connecting the release points from two facilities and if the wind were blowing along the same line at the time of the accident. A brief discussion of synergistic effects was added to Appendix K.1.3.2.

MD170-34

Cumulative Impacts

Section 4.32 was revised to include additional and updated reasonably foreseeable actions at each of the candidate sites, including Hanford. The Groundwater/Vadose Zone/Columbia River integration project is not expected to impact the cumulative impacts studied in this SPD EIS.

MD170-35

Human Health Risk

The calculations were performed to assess the doses from operating the proposed surplus plutonium disposition facilities. The presence on the ground of previously deposited radionuclides does not affect the doses specifically associated with operating these facilities. Doses from existing ground contamination are included in the current Hanford site doses reported in Section 3.2.4. The total doses from existing contamination and from operating the proposed surplus plutonium disposition facilities are reflected in the cumulative doses given in Section 4.32. There would be no releases of radioactivity during the construction of the proposed surplus plutonium disposition facilities, and therefore no associated radiological impacts (e.g., see Section 4.3.1.4).

MD170-36

Facility Accidents

DOE appreciates the feedback on the SPD Draft EIS. Table K-1 was revised to include units for the values.

MD170-37

Facility Accidents

The Native American subsistence scenario represented exposures to a Native American who engaged in both traditional lifestyle activities (e.g., hunting, fishing, and using a sweat lodge) and contemporary lifestyle activities (e.g., irrigated farming). Exposure pathways included those defined for the residential farmer scenario plus additional pathways unique to the Native American subsistence lifestyle (such as sweat lodge use). The exposures were assumed to be continuous for 365 days per year over a 70-year lifetime. The scenario used native food ingestion rates. This scenario was developed for the *Tank Waste Remediation System Final Environmental Impact Statement* (DOE/EIS-0189, August 1996). It was found that by incorporating subsistence lifestyle activities and native food ingestion rates, this scenario resulted in exposures that would be approximately 5 times higher than the exposures for the residential farmer scenario. It must be realized, however, that this scenario was developed within the context of post-remediation risk (the risk resulting from residual contamination remaining on the site after remediation is completed) as opposed to the risk from accidents. The analysis of accidents in the above-referenced EIS was performed in a similar manner to that of this SPD EIS, restricting the dose pathway to inhalation and setting (dry) deposition velocities to zero. Also, the *Tank Waste Remediation System Final EIS* (DOE/EIS-0189, August 1996) was concerned with the radioactive contaminants in the waste tanks at Hanford, which contain primarily fission products. Many of these fission products are far more mobile through soil and water pathways than plutonium, the primary radiological hazard in this SPD EIS. Consequently, the current facility accident methodology is considered to be adequate in light of the Native American subsistence scenario and consistent with the assessment of consequences in the *Tank Waste Remediation System Final EIS* (DOE/EIS-0189, August 1996).

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Section K.14.2, Modeling of Dispersion of Releases to the Environment, states criticality doses are based on 1×10^{19} fissions. Most prior criticality accidents have been self-limiting for a variety of reasons, including boiling of water in solutions. It is not clear that the potential accidents for these facilities would be conservatively bounded by these assumptions. Therefore, we recommend that the basis for the number of fissions assumed in the criticality accidents be discussed. 38

The ground surface accelerations used in Section K.15.1, Beyond Design Basis Earthquake, are outdated. We recommend the most recent ground surface accelerations be used. 39

The adjustment of the damage ratio for plutonium in the vault from 0.5 to 0 on a beyond design basis earthquake (page K-15) is not realistic. Some of the plutonium containers will be damaged. We recommend that, to be conservative, the damage ratio be re-set to 0.5. 40

The following typographical or grammatical errors were discovered:

Summary, page S-22, "summarize" should be "summarizes."
 Section 2.1.3, page 2-8, second paragraph, first sentence – the words "a potential" appear to be extraneous. 41
 Section 3.2.8.2.2, page 3-36, third paragraph, last sentence – the verb should be "are" rather than "is."
 Section 3.2.9.3.1, page 3-39, first paragraph, second sentence – "Yakima" should be "Yakama."

MD170

MD170-38

Facility Accidents

Appendix K.1.4.2 does not address the criticality source term, so it is assumed that the commentator is referring to Appendix K.1.5.1, where it is stated that the source term for the analyzed criticality is based on a fission yield from 1.0×10^{19} fissions in an oxide powder. This value is conservative compared with the guidance in *Airborne Release Fractions/Rates and Respirable Fractions for Nonreactor Nuclear Facilities* (DOE-HDBK-3010-94, October 1994), which specifies a reference yield level of 1.0×10^{18} fissions for fully moderated and reflected solids, and 1.0×10^{17} for dry powder and metal (Sections 6.3.2 and 6.3.3, respectively).

MD170-39

Facility Accidents

Appendix K.1.5.1 was revised to delete the out-of-date ground acceleration data referred to by the commentator.

MD170-40

Facility Accidents

The proposed surplus plutonium disposition facilities would be designed to Category 1 seismic criteria, meaning that a building collapse would be extremely unlikely. The assumption of vault survivability of the beyond-design-basis earthquake is based on the fact that the vaults would be designed with significantly more robustness than the balance of the proposed facilities. These requirements for the additional robustness derive from a desire for increased protection of the vault contents against physical catastrophes such as aircraft crash and against the threat of nuclear proliferation. Design features to address these concerns would increase vault survivability of a beyond-design-basis earthquake. Specifically, the vault would be expected to survive seismic events of sufficient magnitude to collapse the processing areas of the proposed facilities. The assumptions incorporated into this SPD EIS analyses are considered to be appropriate for assessment of environmental impacts and comparison of alternatives considered.

MD170-41

General SPD EIS and NEPA Process

DOE appreciates the feedback on the SPD Draft EIS. The errors were corrected.



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Testimony Before the
U.S. Department of Energy
on the Surplus Plutonium Draft Environmental Impact Statement

Michael Graine, Assistant Director
Oregon Office of Energy
August 18, 1998

Good afternoon. My name is Michael W. Graine. I am Assistant Director of the Oregon Office of Energy. I am here today on behalf of the State of Oregon. I will make a few remarks here today, and later we will submit more extensive written testimony on the Surplus Plutonium Draft Environmental Impact Statement.

We thank you for holding this hearing in Oregon and for the opportunity to express our concerns about the disposition of surplus plutonium. We recognize that the fate of surplus plutonium is an issue that transcends regional interests. The State of Oregon applauds the efforts to reduce nuclear weapons inventories worldwide and the related efforts to reduce the available stores of plutonium.

At the same time, we are especially concerned about any action at Hanford that would increase what is already a fundamental threat to the Columbia River — and a threat to the well-being of the millions of Oregonians who rely on the river. We remain opposed to any activities at Hanford that would detract from cleaning up what has been described as the most contaminated site in the Western Hemisphere. Because of this concern about Hanford cleanup, we support the draft statement in its selection of other sites as superior to Hanford for the fabrication of mixed oxide fuel.

We also support former Secretary Peña in his recent announcement that Hanford's mission should be exclusively focused on cleanup. For example, the use of the Hanford Fuels and Materials Examination Facility for weapons disassembly or fuel assembly would contaminate a clean facility at Hanford. We oppose the contamination of yet even more buildings at Hanford.

So do Oregon citizens. Three years ago, we held statewide public forums for more than 800 citizens to hear their opinions on plutonium disposition. Three messages clearly emerged from the forums: Cleanup must remain the only mission at Hanford. Vitrification is the least objectionable option for plutonium disposal. And Oregon must have a stronger voice on Hanford issues. In 1997, Oregon's Legislature mirrored this popular support for cleanup by passing a bill opposing any Hanford operations that would create more waste at the site and divert cleanup efforts.

ORD03

ORD03-1

Alternatives

DOE acknowledges the commentor's support of the surplus plutonium disposition program.

ORD03-2

Alternatives

DOE acknowledges the commentor's concern about potential contamination of the Columbia River. 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.

ORD03-3

Alternatives

DOE acknowledges the commentor's opposition to the use of FMEF at Hanford for surplus plutonium disposition activities.

ORD03-4

Alternatives

DOE acknowledges the commentor's support for the immobilization 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.

Grainey Testimony/p. 2
Aug. 18, 1998

We know that the scope of this hearing and the draft environmental impact statement does not include the issue of where mixed oxide fuel will be burned once it is fabricated. As we said earlier in this process, we continue to believe that vitrification is a faster and safer option than burning — and poses less risk to both people and the environment. Vitrifying could also be less costly than the burn option. We continue to urge the Department to seriously consider a 100 percent vitrification option for the surplus plutonium. 4

Thank you.

ORD03

69th OREGON LEGISLATIVE ASSEMBLY—1987 Regular Session

Enrolled
House Bill 3640

Sponsored by Representative SONVA, Representatives ROBERTS, Senators DERFLER, TROW

CHAPTER _____
00617

AN ACT

Relating to nuclear facilities.

Be It Enacted by the People of the State of Oregon:

SECTION 1. The Legislative Assembly and the people of the State of Oregon find that:
(1) The maintenance of healthy, unpolluted river systems, airsheds and land are essential to the economic vitality and well-being of the citizens of the State of Oregon and the Pacific Northwest.

(2) Radioactive waste stored at the Hanford Nuclear Reservation is already leaking into and contaminating the water table and watershed of the Columbia River and radioactive materials and toxic compounds have been found in plants, animals, water, groundwater from the Hanford Reservation and in the air over the Hanford Reservation, which pose a health threat and potential threat to the health of the people of the State of Oregon.

(3) The Hanford Nuclear Reservation is now one of the most radioactively contaminated sites in the world, according to government studies, and will require billions of dollars in costs for cleanup and the ongoing assessment of health effects.

(4) In November 1980, the people of the State of Oregon, by direct vote in a statewide election, enacted a moratorium on the construction of nuclear power plants, and no nuclear power plants are presently operating in the State of Oregon.

(5) In May 1987, the people of the State of Oregon, by direct vote in a statewide election, enacted Ballot Measure 1, opposing the disposal of highly radioactive spent fuel from commercial power plants at the Hanford Nuclear Reservation.

(6) In 1985, the Legislative Assembly resolved that Oregon should have all legal rights in matters affecting the Hanford Nuclear Reservation, including party status in the Hanford tri-party agreement that governs the cleanup of the reservation.

(7) Throughout the administrations of Presidents Ford, Carter, Reagan and Bush, the policy of the Federal Government banned the use of plutonium in commercial nuclear power plants due to the risk that the plutonium could be diverted to terrorists and to nations that have the capability to use it as a weapon.

(8) The Federal Government has announced that it will process plutonium from weapons with uranium to produce mixed oxide fuel for commercial nuclear power plants and other nuclear facilities. The Hanford Nuclear Reservation, located on the Columbia River, is a primary candidate site being considered for the production facilities.

(9) The production of mixed oxide fuel will result in enormous new quantities of radioactive and chemical wastes that will present significant additional disposal problems and unknown costs.

Enrolled House Bill 3640 (SB 3640-A)

Page 1

SECTION 2. The Legislative Assembly and the people of the State of Oregon:

(1) Declare that the State of Oregon is unalterably opposed to the use of the Hanford Nuclear Reservation for operations that create more contamination at the Hanford Nuclear Reservation, divert resources from cleanup at the Hanford Nuclear Reservation and make the Hanford Nuclear Reservation cleanup more difficult, such as the processing of plutonium to fuel nuclear power plants, reactors or any other facilities, and further declare that victimization in a safe manner is the preferred means to dispose of excess plutonium, in order to protect human health and the environment.

(2) Request that the President of the United States and the Secretary of the Department of Energy continue their previous policy of banning the use of plutonium to fuel commercial power plants and nuclear facilities.

(3) Request that the Federal Government honor the Federal Government's original mandate to implement and complete the cleanup and restoration of the Hanford Nuclear Reservation.

SECTION 3. Not more than 10 days after the effective date of this Act, the Secretary of State shall transmit copies of sections 1 and 2 of this Act to the President of the United States, the Secretary of the Department of Energy, the Majority Leader of the United States Senate, the Speaker of the United States House of Representatives, each member of the Oregon Congressional Delegation, the Governors of the other 49 states and the tribal councils of the federally recognized Indian tribes in Oregon, Washington and Idaho.

Passed by House June 10, 1997

Received by Governor
7:08 P.M. July 4, 1997

Ramon J. Hernandez
Speaker of House

Approved
B. ZA P. July 15, 1997

John J. Benson
Governor

Passed by Senate June 19, 1997

Filed in Office of Secretary of State
4:43 P.M. July 25, 1997

Barry C. Johnson
President of Senate

P. J. Williams
Secretary of State



United States
Department
of Energy

Comment Form

NAME: (Optional) GERRI PECK
ADDRESS: 2405 NE 46th Ave. Portland, OR 97213
TELEPHONE: 503 288-2497

E-MAIL: gerri@compuserve.com
MOX SHOULD NOT BE ALLOWED ANYWHERE. MY
Grandson shooting an environmental film on the
Columbia says the River has Orange sludge on it -
a "gift" of all the chemicals which abound. I work
with young children in the public schools. Wondrous
children who at the age of 5 & 6 can read & write &
spell & do numbers. ASTOUNDING - to me. But what kind
of world for these baby geniuses? What of THEIR future?
Can we promise them a clean, safe, healthy environment?
WHY NOT? And what of all the healthy people who will
be rendered ill? All of us in good conscience must say
NO to these mad nuclear machinations. SO, I support ALL
the slogans: NO to nuclear proliferation! Clean up Hanford!
Save the beautiful Columbia - in Wandy Guthrie's name!
NIX MOX. There are alternative forms of energy which are
acceptable and safe... and inexpensive. The future is in
your hands. If we don't survive, it will be on your conscience.
If you are still around. Think carefully. Think about the
people. Do not poison us - the atmosphere, the environment,
the water. Keep it ALL safe, healthy & clean. We are
DEPENDENT on you to take care of us. DO YOUR JOB
WELL. Be on the side of the people, not the corporations.
SAVE THE EARTH. Look before you leap... Listen closely
& carefully to these voices of protest, voices who want a future.

ORD16

ORD16-1

MOX Approach

DOE acknowledges the commentor's opposition to the MOX approach. 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.

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. 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.



United States
Department
of Energy

Comment Form

NAME: (Optional) Don Peterson
ADDRESS: 1366 S.W. Taylors Ferry Ct. Portland, OR. 97219
TELEPHONE: (503) 284-3933

E-MAIL:
Relative to the proposed MOX program at Hanford Wash. I
reject this proposal and demand that you do not pursue
it any further. I am opposed to any increase in nuclear
waste when in fact we (the U.S.) have no safe place for storage
because there is no place and can never be any safe
storage of such deadly dangerous substance as radioactive
waste. The shipment of waste produced by MOX is also
highly objectionable, endangering communities and the
environment wherever it may travel.

NO! to MOX
NO! to nuclear energy
NO! to uranium extraction

Sincerely, D. Peterson

MD247

MD247-1

Alternatives

DOE acknowledges the commentator's opposition to the MOX approach to surplus plutonium disposition, and in particular siting the MOX facility 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. 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.

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

GENERAL NOTE

Much of the following information was presented on Tuesday, August 18, 1998 at a Public Meeting held in Portland, Oregon on the above-captioned subject. Additional comments, based on information received after that date, are also included to sustain questions that were raised at that Public Meeting.

Although these comments are being sent directly to the Department of Energy, other recipients are strongly encouraged to forward this information to other contacts to achieve the widest-possible distribution and to assist in developing additional lines of inquiry.

Much of this information was developed during and preparatory to a research tour of Canada and the mid-western United States during the period of June 23 through August 7, 1998. This research included reviewing available public printed and **MNW** documents; e-mail and telephone communications with persons employed by AECS, AECL and Ontario Hydro; and a subsequent review of Ontario Hydro's engineering and design documents at their Bruce NPD facility.

Readers may contact PSRA at the above addresses regarding questions about this information or additional related data that has been referred to in this comment and which is undergoing review.

W. P. Mead, Director
Public Safety Resources Agency
Portland, Oregon
September 16, 1998

TO: United States Department of Energy
Office of Fissile Materials Disposition
c/o SPD EIS
P. O. Box 23786
Washington, D. C. 20026-3786

FROM: W. P. Mead, Director
Public Safety Resources Agency
P. O. Box 724
Portland, OR 97207-0724
E-mail: "billm@band1.bandwidth.net"

DATE: September 16, 1998

RE: Public Comments - Surplus Plutonium Disposition;
Draft Environmental Impact Statement

MD236

INTRODUCTORY COMMENTS

The disposal of Surplus Weapons Plutonium has been channeled into two primary processes: immobilization, and MOX Fuel that would be "burned" in nuclear reactors. Most of the comments we've reviewed about the SPD EIS appear to overwhelmingly favor immobilization (vitrification within high-level radioactive wastes from our nuclear defense legacy) over the MOX Fuel option.

While MOX Fuel is technically not a satisfactory answer for disposal of all Surplus Weapons Plutonium, immobilization of the entire inventory of Surplus Weapons Plutonium is technically feasible and could be achieved much more rapidly and with less cost, fewer security risks, fewer adverse societal ramifications, and without creating additional waste streams to endanger the environment and public health and safety.

The use of MOX Fuel introduces many additional factors that may lessen the degree of control over the reactor's core. MOX Fuel requires higher operating core temperatures and pressures and significantly reduces the "margin of error" that is allowed when operating the reactor. Also, we have no true operational experience with these types of core loadings. Therefore, what we have based our "findings" on to date are, in reality, only conjecture about what we hope to achieve.

Regardless of the increasing body of research that now indicates that MOX Fuel is an expensive and risky alternative, the fact remains that it most likely will be used as a primary disposal option. Acting under that assumption, PSRA explored alternatives to existing LWRs (Light Water Reactors) in the United States.

Most of the persons and organizations who oppose the MOX Fuel option have concentrated on the safety issues that are associated with using MOX Fuel in Light Water Reactors such as those currently used to produce power in the United States, however it is important to also determine whether MOX Fuel can be safely used to run CANDU Reactors as was proposed as an alternative and/or supplemental platform.

PSRA has studied this issue and hopes to focus additional attention on this option and the safety, societal and security concerns that must be addressed before using MOX Fuel in CANDU power reactors currently operating in Ontario, Canada. To that end, we offer the following comments for the public record.

SPECIFIC COMMENTS

The National Academy of Sciences' 1995 Report ["Management and Disposition of Excess Weapons Plutonium Reactor-Related Options for the Disposition of Excess Weapons Plutonium, Committee on International Security and Arms Control, National Academy Press, Washington, D.C., 1995] raised questions about the CANDU Reactor's role in the disposition of Surplus Weapons Plutonium by using it as MOX Fuel in existing Canadian reactors.

NAS reported that the information cited in their Report had been submitted by AECL too late to undergo Peer Review of AECL's claims of CANDU's suitability and safety when using MOX Fuel.

It is important that we realize that the selection of MOX Fuel as a disposal option vastly changes the dimensions of the joint agreement between Russia and the United States. The inclusion of the MOX Fuel option has opened-up new industrial and marketing channels throughout the world, including Great Britain, Europe and Japan.

MD236

MD236-1

Alternatives

DOE acknowledges the commentator's concern about the use of MOX fuel in domestic, commercial reactors. The fabrication of MOX fuel and its use in commercial reactors have been accomplished in Western Europe, and electricity was generated from MOX fuel on a demonstration basis in the United States in the early 1970s. 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.

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 program are analyzed in this SPD EIS for each candidate site, and a detailed analysis is provided in Appendix H. 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 be 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.

Decisions on the surplus plutonium disposition program will be based on national policy and nonproliferation considerations, environmental analyses, technical and cost reports, and public input.

MD236-2

MOX Approach

Only a partial, not full, MOX fuel core would be used in the selected reactors, which would require only slight modifications to reactor operations. Core load and safety analyses would be performed, and an NRC license amendment approved, prior to MOX fuel being introduced into any reactor. Operations and maintenance procedures would be revised as necessary to accommodate the use of MOX fuel. Section 4.28 was revised to provide reactor-specific analyses and discuss the potential impacts of using a partial MOX core during routine operations and reactor accidents.

Disposition of surplus plutonium will cost money, regardless of the method used. 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.

MD236-3

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 Draft 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

Instead of limiting the proliferation of Plutonium, these countries will be the controlling interests in spreading a Plutonium-based economic infrastructure in areas that do not currently have readily-accessible Plutonium.

4

Much of PSRA's recent e-mail has been forwarded on behalf of persons who live in the State of Michigan and the adjacent areas of the Province of Ontario, Canada, that will be the site of MOX Fuel transportation, testing and disposal once the MOX Fuel has been irradiated in CANDU reactor(s) at the Bruce Nuclear Power Development facility near Tiverton, Ontario.

In an effort to better understand these issues, I visited these areas in July 1998. Although the findings stated below are only preliminary as of this date, the on-going review process has shown no valid reason why they should not be included in our comments.

First, it should be clearly understood that the inclusion of the CANDU Reactor as a MOX Fueled disposal option adds another three separate entities to the current equation that already includes the Russians, the United States, potential infrastructure contractors in Europe and the United States, and the owner/operators of civilian power reactor utilities. These three entities are:

3

1. **AECB (Atomic Energy Control Board)** - The Canadian Government's equivalent to the Nuclear Regulatory Commission here in the United States.

2. **AECL (Atomic Energy of Canada, Limited)** - The design, construction and marketing arm that is heavily involved in Russian plutonium operational planning; and

3. **Ontario Hydro** - The reactor operators in Ontario;

Now that we've identified the Canadian entities, it's time to see how this puzzle fits together, why it soon becomes controversial, and to bring to light some of the misunderstandings and/or inconsistencies that have been presented by these three parties.

1. **AECB:**

PSRA contacted AECB in May 1998 to determine its role in the MOX Fuel project. AECB stated that its sole role would be to ensure the safety of the fuel and reactors, and that it would establish rules to ensure compliance. AECB had already posted information on its Website that related to the requirement of safe and secure transportation and storage of MOX Fuel.

It is interesting to note that recent statements in the Canadian Press attributed to AECL contradict this information about secure transportation while in Ontario. The U. S. Department of Energy has stated that MOX Fuel shipments would comply with SST-2 (Safe Secure Transport - 2) levels to ensure security while in the United States.

This would include armed escorts to counter any attempted hijacking of MOX Fuel. While Canada's AECB had stated it would comply with this standard, AECL has made statements that contradict AECB's. Has AECL superseded AECB's role in safeguarding plutonium?

5

MD236

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 Russian's disposition capability, shipments of the Russian MOX fuel would take place directly between Russia and Canada. Activities in Canada would be conducted in accordance with applicable Canadian laws and regulations and would be regulated by the appropriate government authorities.

MD236-4

Nonproliferation

DOE believes the MOX approach to surplus plutonium disposition would help implement rather than change the commitments between Russia and the United States. 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.

The remainder of this comment is addressed in response MD236-1.

MD236-5

Parallex EA

DOE is no longer actively pursuing the CANDU option as discussed in response MD236-3.

The following is an excerpt from Tom Spears' article in the Ottawa Citizen [Page A1-A2, Sunday 30 August 1998: "AECL's Cold War cargo - Plutonium from nuclear warheads to pass through Ottawa Valley to Chalk River."]

According to that report, AECL's spokesman, Larry Shewchuk, stated that high security won't be needed for the imported weapons material. "There's no police escorts or anything like that."

(AECL has consulted the Ontario Provincial Police about the shipment, but the OPP said it sees no security problems and won't be involved in the shipment.)

The exact timing of the test shipment is secret. While it may be possible to conceal the transportation from Los Alamos, New Mexico, to Chalk River, Ontario, of the initial test MOX Fuel, it is extremely doubtful that SST-2 shipments to the U.S./Canadian border could be concealed from the public.

The initial test will consist of MOX Fuel that contains approximately 600 grams (1.3 pounds) of Surplus Weapons Plutonium in the fuel assemblies; a full core loading in an average CANDU Reactor at the Bruce NPD facility uses nearly 3,185,600 pounds of natural Uranium Dioxide.

There are three possible routes from Los Alamos to Chalk River:

One would cross the border at Sarnia and come east along Highway 401, turning north at Belleville toward Pembroke.

Another would come through Watertown, New York, cross the St. Lawrence River at the Ivy Lea Bridge, then turn east to Brockville and north through Smiths Falls, Carleton Place, Almonte and Arnprior on the way to Chalk River.

The third would cross into Canada in Manitoba and travel north of Lake Superior on the Trans-Canada Highway.

Having recently driven many of these routes in both an RV and small car, I can make several observations with certainty based on my personal experiences in Canada and the midwestern United States:

1. Canada's roadways are not up to the safety and design standards that Americans take for granted: There were literally miles of vehicles following each other at high speed and close intervals through winding hills without passing lanes or even a place to pull off the highway. Highways are being upgraded, but some areas are still without travel services.

2. There are environmental and ecological considerations that Americans don't even contemplate: Traffic along the Trans-Canada Highway frequently stops during night time hours due to the danger of hitting a moose.

3. Incidents of "Road Rage" have become so frequent in Ontario that new - mandatory - programs have been linked to traffic enforcement efforts along many of the routes identified for MOX Fuel shipments.

Even though it's AECL policy not to say publicly which route it will use, or when the shipment will come through, it is important that local emergency planners along the route be notified. Municipal officials in Lanark County, Smiths Falls and Carleton Place -- all on one of the possible shipping routes -- said they didn't know about the shipment.

While this secrecy may hold true for the initial test run, PSRA seriously doubts that the increased security necessary for large MOX Fuel shipments will remain unnoticed by citizens who live in farming and natural resources areas along these routes.

2. AECL:

Robert Gadsby is the Program Director of AECL's MOX Fuel project. As such, he and his team have visited sites in the United States and Russia in an effort to facilitate using AECL's CANDU Reactors to dispose of Surplus Weapons Plutonium.

Mr. Gadsby and I began our communication via e-mail on June 16, 1998 and continued our communication via e-mail and telephone calls. At first, Mr. Gadsby's primary object appeared to be to determine why PSRA was interested in AECL's CANDU design and who would receive our report.

Although I had requested only general information in my first e-mail to Mr. Gadsby's office, I had to follow-up that request with specific quotes from the NAS Report to convince Mr. Gadsby that I had read the report and was following up on the NAS Report's findings. These specific quotations from the NAS questions are included below for reference:

[FROM 06/17/1998 E-MAIL: PSRA to AECL]

Wednesday, 17 June 1998
Robert,

Yes, I've already made arrangements with Ontario Hydro for my visit at Bruce NPD, but I was hoping that I would be able to get some general information about the CANDU design before I visited their facility.

I've been dealing with Catherine Williams at Bruce, and she sent me some very general information. I then contacted AECB who referred me to AECL as the manufacturer of the CANDU reactor.

I believe my visit to Bruce would be more productive if I had a better understanding of the points listed below. This would allow me to focus on site specific training and operational history during my visit at Bruce.

To that end, I still would like to visit AECL's offices to get a better understanding of the CANDU reactor: Is there anyone else in the office who could discuss the CANDU's "non-MOX" operation as it is currently fueled at Bruce? It seems that since 20 CANDUs are operating in Ontario - and that the AECB referred me to your offices - that I should be able to get general (non-MOX) information about the reactor's design and operational safety features from someone in Mississauga.

I'm sorry that it seems that we won't be able to meet on July 16th. As the Director of AECL's MOX Project, talking with you would have been the most productive way to approach this. Perhaps you could put together an "Information Kit" on the MOX Project for me to pick up while I'm in that area. I would then be able to review that information before I visit the Bruce facility, and I would be able to follow up on this area of research when I return to Portland.

In reviewing the National Academy of Sciences' documents on using the CANDU reactors at Bruce, they were very clear that the information stated in those documents: "The panel notes that for this option virtually all of the information made available to the panel was provided by the vendor, and had not yet been reviewed by DOE or other organizations." (page 144)

MD236

The report then presents several pages of discussions on the advantages and/or disadvantages of using the CANDUs in that role. On page 151, the report included footnote 22:

"The panel was informed by representatives of the vendor that this figure was arrived at not by analysis designed to estimate the maximum plutonium loading that could be safely accommodated in CANDU reactors, but rather because this was the loading required to meet DOE's specified goal of consuming 100 tons of WPU (the potential combined excess stocks of the United States and Russia) in 25 years of operation, given the estimated capacity of the FMEF fabrication facility (Feinroth 1994). Additional studies should be pursued to determine the maximum safe plutonium loading; higher plutonium loadings would increase the rate of plutonium disposition and reduce the number of fuel bundles that would have to be fabricated, potentially lowering costs."

The report continues along several other threads, however the main reason for our interest here in the Northwestern United States is that the FMEF, cited above, is located at Hanford, and AECL apparently wants to use this facility. On page 152, the report cites "Fuel Fabrication: Like the United States, Canada has no MOX fuel fabrication capacity. Fabricating MOX fuel for CANDUs at the Hanford FMEF facility would be the most expeditious approach, with the same caveats as is the LWR case. The vendor has in fact examined fabrication of MOX fuel in the FMEF in considerable detail, and believes that large throughputs of CANDU MOX fuel (over 160 MTHM/yr) are possible, by taking advantage of additional floor space not used by the current MOX fabrication line in the facility (AECL 1994)."

Since much of the report on the CANDU option was based solely on AECL's preliminary information that had not been reviewed by USDOE or other agencies, we're interested in reviewing the updated findings. Although the majority of the workforce in the communities surrounding Hanford's FMEF is understandably in favor of pursuing the MOX option, it appears that the majority of the populations in the states surrounding that area have questions about the advisability of increasing FMEF production at a time when they had been informed by USDOE that FMEF's mission would be ending.

If I can report that AECL's latest research indicates that the CANDU reactor can use a higher level of MOX fuel than was stated in the NAS report, then it could be assumed that FMEF operations could be shortened by several years. If we can pass the questions of how to contain potential FMEF site contamination and transportation - security issues there appears to be a better probability for agreement about using FMEF in that new role.

I believe that most persons, regardless of how they feel on the use of MOX fuel, agree that MOX-fueled reactors will be a part of our future. The President has declared this will be done, the industry is widely in favor of it, and most persons don't want to waste a "product" that they already have paid for and can provide future energy needs.

While the general public in the Northwestern United States may not be in favor of using FMEF for a 25 year program for LWRs in the U.S., they may well reverse that opposition if they understand that the plutonium was being sent out of the country for use in a "safe" reactor.

Based on my preliminary understanding of the CANDU design that would be used at Bruce to contribute to this project, CANDU appears to be a logical choice for the disposition for WPU, however I still cannot give a final recommendation to our states until we have information that is more recent than the NAS report that is commonly cited in this discussion.

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MD236

MD236-6

Parallex EA

This comment is addressed in responses MD236-3 and MD236-5.

I also have reviewed AECP's 1997 summary regarding the use of MOX fuel in CANDU reactors and the associated issues. I think you'll agree that the project is feasible from a purely engineering standpoint, and that the CANDU would be a better platform than would a LWR. These factors appear to be strongly in favor of the CANDU, and I'd like to update the information we currently have.

As to my original request, I would appreciate any information you could provide on the following topics:

1. A general overview of the CANDU 's safety and control features as it is currently operating (non-MOX mode);
2. Discuss how a MOX-fuel core loading would modify those operating characteristics; and,
3. Better understand what design modifications might be required to accommodate the use of MOX fuel.

I will be in Mississauga on 16 July 1998 and would like to visit AECL's offices to talk with someone on the general characteristics of a CANDU reactor operating in a "standard" (non-MOX) mode. I also would appreciate any information you are able to provide to update the NAS's 1995 report. I realize that you will not be personally available to meet with me on July 16th, however I sincerely hope that someone can provide me with the above information so I have a better understanding of the CANDU platform before I visit the Bruce NPD on the following day.

Thanks for your assistance in this matter. I will be leaving on a family vacation and research trip next week, so I'd greatly appreciate any help you can provide via e-mail or telephone. As far as receiving printed information, I'd like to have the opportunity to review it before visiting the Bruce facility, so I would want to personally collect that on July 18th when I'll be in Mississauga for other meetings.

PSRA's report is due in mid-August, and I hope to be able to report that AECL has provided us with the information our states need to make an informed decision about the use of specific facilities at the Hanford Reservation.

I hope to meet one of your co-workers on July 17th.

Sincerely,

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

Following these specific questions, Mr. Gadsby stated that the U.S. Department of Energy had funded at least one additional (subsequent) study that showed that MOX Fuel was suitable for use in AECL's CANDU Reactors. When I requested a copy of that study's findings, Mr. Gadsby stated that it was "AECL's proprietary information" and that it was not to be released.

MD236

Instead, Mr. Gadsby sent me a copy of a general talk he had presented to a Japanese pro-MOX forum. Mr. Gadsby's latest information was non-technical and did not answer many of the specific questions I had asked, so I clearly restated my request for information:

{FROM 06/17/1998 E-MAIL: PSRA to AECL}

Wednesday, 17 June 1998
Robert,

Thanks for your reply to this morning's e-mail. I have reviewed the file you attached, and it appears that the CANDU reactor would be a better platform for this project than would a LWR of the type we commonly use in the United States. ...

Based on your presentation, it initially appears that a CANDU program would have several benefits over a siting within the United States. Primary among these are (1) the WPU would truly be able to achieve the Spent Fuel Standard, (2) the length of time for the reduction program could be shortened if the CANDUs were allowed to operate as you described in your report, (3) the CANDU's design would not require making physical changes to its core, (4) AECB already has stated that it would provide a level of physical security equivalent to USDOE's to safeguard the fuel while within Canada, and (5) that the spent fuel would remain in Canada instead of being returned to the United States.

These are all points that the average citizen would likely accept, however most of the information we've received to date was not clear on those points. Given that, you can understand why many of them have had reservations about the MOX program.

This is only my personal opinion, but based on several years of work in the business and the area, I still believe additional information would be needed to allay the doubts of several persuasive organizations who have political weight in the decision-making process: The fact is that the President made a decision to pursue a dual-track disposal option and it will happen; the reality is that solid technical arguments must be presented to overcome political opposition that may be based on what appears to be faulty information that we have received to date. ...

You asked about our clients: They are several voting members - a majority - of an official interstate waste board and several adjunct agencies who are working on site remediation issues at the Hanford Reservation. ...

This has led me to perceive that the opinion of a majority of the citizens in the Northwestern United States is opposed to a MOX-fuel option; particularly if Hanford's FMEF and/or FFTF facilities are involved in that process. USDOE has just announced that public hearings and comments will be accepted on these proposals until approximately mid-August. PSRA has been asked to have our report ready in time to allow the clients to review those findings, and with sufficient time for them to then submit comments prior to that deadline.

I had been aware of several other studies similar to the ones you've mentioned, however most of the published studies deal with LWRs, not CANDUs. Is there any non-proprietary information you could allow me to review? Also, is there anyone whom I could contact about the general non-MOX operations of a CANDU reactor?

6

MD236

3-473

AECL has been identified as the manufacturer of the CANDU reactor, yet the general public really doesn't know much about how it operates. I'm not asking to be allowed to rummage through AECL's corporate secrets; only that I be allowed to get general (non-MOX) information about the reactor's design and operational safety features from someone in Mississauga.

To repeat what I've requested in my previous e-mails: I still would like to visit AECL's offices to get a better understanding of the CANDU reactor. Is there anyone in the office who could discuss the CANDU's "non-MOX" operation as it is currently fueled at Bruce? It seems that since 20 CANDUs are operating in Ontario - and that the AECL referred me to your offices - that this is a reasonable question.

Our concern here in the Northwestern United States is based on the potential long-term role as a MOX-fuel fabricator, with the possible (and currently, proven) diversion of funding by USDOE from the remediation of contaminated sites at the Hanford Reservation.

To this end, Hanford's FMEF directly enters into the equation: MOX will be a fact of life, therefore Hanford will play a central role in achieving those goals. If CANDU can speed up that process while reducing the time needed, then the cleanup of existing sites could be accomplished sooner than if LWRs in the United States were used to achieve those goals.

My gut feeling is that our clients - and the majority of the persons in the Northwestern United States who are not associated with the Tri-Cities workforce - will accept virtually any solution that will result in a reduction of the contamination at Hanford while concurrently relieving them of the potential creation of more irradiated spent fuel. Thus, if CANDUs can do this work and Canada is willing to retain possession of the spent fuel, then that is a major "selling" point that should be included in our report.

As I stated to you in my previous message: While the general public in the Northwestern United States may not be in favor of using FMEF for a 25 year program for LWRs in the U.S., they may well reverse that opposition if they understand that the plutonium was being sent out of the country for use in a "safe" reactor.

As to my original request, it appears that we've been successful in answering most of my questions, however I would appreciate any information you could provide on the following two remaining points:

1. A general overview of the CANDU 's safety and control features as it is currently operating (non-MOX mode); and,
2. Discuss how a MOX-fuel core loading would modify those operating characteristics.

I will be in Mississauga on 16 July 1998 and would like to visit AECL's offices to talk with someone on the general characteristics of a CANDU reactor operating in a "standard" (non-MOX) mode. I believe I now have a better understanding of the design characteristics of the platform, but I would like to understand the actual operational and safety differences between CANDUs and the LWRs with which I am more familiar.

Thanks, again, for your assistance in this matter. You've taken a lot of time to respond to my questions, and I very much appreciate the supplemental information you've provided. If you have any information of a "general" (non-MOX-fueled core) nature for CANDU reactors, I really would like to be able to review that material before visiting the Bruce NPD facility.

MD236

I will be leaving Portland early next week, and probably would not receive that information before I leave. However, as I will be staying in the Mississauga - Port Credit area during early July, it would be easier for me to collect any written information during that time period.

To summarize what I said earlier today: PSRA's report is due in mid-August, and I hope to be able to report that AECL has provided us with the information our states need to make an informed decision about the use of specific facilities at the Hanford Reservation.

I hope to meet one of your co-workers or at least be able to pick up the requested AECL information on July 17th.

Sincerely,

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

Mr. Gadsby returned my telephone call and we spoke on these topics for approximately twenty-five minutes. He stated that although he and his team would be in Russia during the time of my visit (I was staying just a few miles away from AECL's office complex in Mississauga, Ontario), that he would arrange for someone to talk with me and would prepare an information package for me to receive during my visit on July 16, 1998.

On the morning of July 16th I telephoned Mr. Gadsby's office at AECL's office complex and was advised (1) that they had no package waiting for me; (2) that no one had been scheduled to discuss the questions Mr. Gadsby had agreed to respond to; and (3) that although Mr. Gadsby had gone to Russia, that no one had been designated to act on Mr. Gadsby's behalf during his absence.

In the end, it appears that although Mr. Gadsby stated that AECL had new findings that supported the ability of CANDU Reactors to safely operate on MOX fuel, the facts are that he admitted that this fuel had not been used in CANDU Reactors of that design, and he was not able to produce the documentation to substantiate his claims on behalf of AECL's unsupported statements in the 1995 NRS Report.

3. Ontario Hydro:

Although it is not intentionally deceptive, the name "Ontario Hydro" is somewhat misleading when first viewed by citizens of the United States.

Most persons who live in the Northwestern United States associate the word "Hydro" as referring to a dam that produces electricity. In fact, when I first began making reservations for the Canadian portion of this summer's research trip, I thought the managers of the RV parks were asking if we wanted to connect to a water faucet.

6

MD236

3-475

"Hydro" is the Canadian term for "electrical power." While this may have been accurate fifty years ago, the underlying source of that electricity has changed from "hydro" to "nuclear": Ontario Hydro now produces about 60% of its electricity in twenty CANDU Reactors. Of these, eight are sited at the Bruce Nuclear Power Development ("Bruce NPD") facility. Of those eight, four have been identified by the U. S. DOE as being considered for using MOx Fuel from the joint U.S.-Russian agreement to dispose of Surplus Weapons Plutonium.

In reviewing Ontario Hydro's operations and safety history before visiting their facility, I discovered (1) that Ontario Hydro had received several warnings from AECS about safety conditions at their nuclear facilities; and (2) their senior management had been reorganized due to the "fallout" from those critical reviews.

I later learned that in an effort to set a record for operating one of the CANDU Reactors at the Bruce NPD, that senior management had decided to intentionally by-pass taking the reactor off-line for scheduled maintenance. This decision resulted in excessive wear on the reactor's physical plant and kept the reactor shut down and off-line for an extended period of time. As I stated in my oral comments at Portland's Public Meeting in August, this is not the type of behavior that should be attempted with this technology.

As part of our research, PSRA was authorized to review technical documents for the eight CANDU Reactors at Ontario Hydro's Bruce NPD. The four reactors in Unit A differed from the four reactors in Unit B in several important design and safety aspects.

At the time of our pre-tour and on-site research the only CANDU Reactors that had been identified for the MOx Fuel role at Bruce NPD were the newer models of Unit B. These four reactors have a total net rating of 3,440MW(e) and produced their first electricity during the years of 1984-1987. However, in late August we received reports from Canadian sources that the older reactors of Unit A were the CANDUs under consideration for this project.

Unit A's four reactors have a total net rating of 3,076MW(e) and produced their first electricity during the years of 1976-1978. This requires clarification and, if true, a re-evaluation of those reactors on the basis of their design, safety and longevity.

The U.S. Department of Energy should clearly identify the specific reactors that are currently being considered for the MOx Fuel disposal option. If reactors in foreign nations are being considered, the Department should also clearly identify those specific reactors and verify that list with the governing agencies of those nations.

6

ADDITIONAL CONCERNS

1. Access to all USDOE/AECL CANDU Studies:

According to Mr. Gadsby, AECL's MOx Project Director, the United States Department of Energy funded the subsequent AECL study that he alleges proved the CANDU Reactor was a satisfactory platform for the MOx Fuel disposal option. Mr. Gadsby also stated that this information was proprietary and was not to be released.

MD236

PSRA questions why - if this was a true statement - the citizens of the United States funded what can essentially be considered an R&D project for a foreign corporation but cannot review the results of those studies.

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The U. S. Department of Energy should release the entire text of these reports, including their references and attachments, for review by the general public and peer review of technical findings that would enable replication of those findings by independent researchers.

2. Disposition of Spent MOX Fuel used in CANDU Reactors:

PSRA was informed that spent MOX Fuel from the initial test at Chalk River, Ontario would remain in Canada for disposal in a geologic repository. As yet, no such repository exists for Canadian spent fuel. If MOX Fuel is to be used in Canada's CANDU Reactors, then it also should remain in Canada after irradiation.

Canada's two major players in the MOX Fuel disposal option are AECL and Ontario Hydro. During our research, both parties stated their contributions were beneficial to world peace by helping to eliminate the available supply of Weapons Plutonium. Their altruism should be ensured by a binding agreement stipulating that once the MOX Fuel leaves the United States that it will never return to our country.

7

Mr. Gadsby stated that the Russians trusted Canada to ensure that Weapons Plutonium used in the MOX Project would not find its way back into nuclear weapons. It logically seems that the only way this could be achieved would be to have the final repository for all spent MOX Fuel to be sited within Canada and be monitored by other neutral countries and organizations such as the IAEA.

If Canada is serious about wanting to "help" ensure the goals of removing this material from circulation, then it should also accept it as the end-user and be willing to co-exist with MOX Fuel from the time it enters the border into Canada as un-irradiated plutonium, and it should safeguard the irradiated spent fuel at a level equivalent to those required by the U. S. Department of Energy.

The U. S. Department of Energy should require that Canada assume perpetual control of MOX Fuel at the time that fuel enters Canada, and that Canada's safeguards be equivalent to those established by USDOE for transportation and storage within the United States. Furthermore, USDOE should not be permitted to accept spent MOX Fuel from any other country, including Russia or other participants in present or future agreements to dispose of Weapons Plutonium of non-U. S. origin.

3. Clarification/Identification of Reactors proposed for using MOX Fuel:

PSRA has recently received reports that several owners and/or operators of reactors under consideration for the MOX Fuel disposal option have withdrawn from participation. In many instances, other owner/operators have been substituted to replace the original owners, but those operators have stated that they did so only to allow one or more of the consortiums to remain in the selection process.

8

If the withdrawal of a component disqualifies a consortium from the selection process, then it also indicates that the owners of that component realized that their participation in the MOX Fuel program was ill-advised.

MD236

MD236-7

Parallex EA

Spent fuel generated by the Parallex Project would be managed in Canada by the Canadian spent fuel program. The remainder of this comment is addressed in response MD236-3.

MD236-8

MOX RFP

DOE acknowledges the commentor's concern about the procurement process. It is common business practice for potential bidders to pursue expressions of interest among qualified potential teaming partners, and as part of that process, determine which are in fact qualified to bid on the scope of work before settling on a team. It is not unusual, especially in large procurements, for teams to undergo several iterations before they are finalized. DOE will not speculate as to the intentions of any members of any responding teams, or others that may have decided in the end not to respond to the RFP. However, DOE agrees that a contract should only be awarded to a team meeting substantially all the requirements of the solicitation. DOE awarded the contract for the MOX fuel fabrication and irradiation services to a consortium that met all required elements.

By allowing "front" reactors to join a consortium merely to include their name on a form so another reactor owner can later join the consortium violates the intention of the process. This demonstrates a lack of good faith by the parties of those consortiums and also on the U. S. Department of Energy for allowing this farce to continue.

PSRA calls on the U. S. Department of Energy to disqualify any consortium that does not include all components that were originally specified by USDOE for participation in that selection process.

8

4. Safeguards, Security, Operational, Environmental, Health and Safety Concerns that require further in-depth evaluation.

It appears that the United States Government still believes that the only time radiation crosses international boundaries is when a reactor is accidentally destroyed at Chernobyl. This phenomenon was repeatedly brought to our attention not only throughout our studies in the United States, but also by environmental remediation agencies during our 1998 research tour in Canada.

While the world-wide radiologic contamination from that incident received global attention and was thoroughly documented by the United States, it is ironic that fallout from nuclear weapons tests originating in the United States - that were monitored throughout the U. S. and showed unusually high radiation levels that extended right to our border with Canada - abruptly ended as the radiation plumes entered Canada.

The U. S. Department of Energy should require all Canadian parties to the MOx Fuel disposal option to comply with USDOE's standards of Safeguards, Security, Operational, Environmental, Health and Safety protection, and it should additionally conduct an on-going monitoring program of all aspects of foreign participation.

All reports, including radiologic monitoring of foreign facilities and transportation routes should be made available to the public via USDOE's WWW site. In cases where foreign regulatory agencies such as Canada's AECS have initiated action against a participant (such as Ontario Hydro), USDOE should retain the right to immediately halt further participation by those parties until the issues have been satisfactorily resolved.

5

5. Paying the financial costs of the MOx Fuel disposal program.

During my discussions with AECL's Mr. Gadsby, he stated that AECL would require funding by the United States to proceed with further implementation of the MOx Fuel program.

Also implied, but not specifically stated, was the indication that the U. S. would have to provide a MOx Fuel fabrication facility because no such facility exists in Canada. Russia also has no facilities to produce MOx Fuel, and has stated that it will require several billion dollars of assistance to move forward with its plans to use MOx Fuel in its reactors.

PSRA opposes any contribution of United States' funding to further a MOx Fuel disposal option. We believe better disposal alternatives exist, and that construction of a MOx Fuel fabrication facility would contribute to a dangerous proliferation of MOx Fuel use.

9

MD236

MD236-9

MOX Approach

Plutonium is regarded by most countries except the United States as a valuable resource. U.S. policy dating back to the Ford Administration has prohibited the commercial, chemical reprocessing and separation of plutonium from spent nuclear fuel. Irrespective of this, the United States will maintain its existing commitments regarding the use of plutonium in civilian nuclear programs in Western Europe and Japan. Russia may choose to reprocess its spent fuel and reuse the plutonium. It will be the responsibility of IAEA to monitor this activity and ensure that the material remains committed to civilian use.

The remainder of this comment is addressed in responses MD236-1 and MD236-3.

If Canada wants to use MOX Fuel in its CANDU Reactors as a part of this program, it should finance that construction and infrastructure entirely as a sovereign (internal) national undertaking.

Also, the United States should not assist Russia in converting to a MOX Fuel option. If Russia is determined that the use of MOX Fuel is in its best national interest, then it has the responsibility to pay for those programs.

The U.S. and Russian disposal options do not truly require direct linkage. Russia views Plutonium as a national asset; PSRA views Plutonium as a worldwide threat and cannot support its use per the current proposals.

The United States should not contribute to additional proliferation in any manner.

9

CONCLUSION

The Public Safety Resources Agency recommends against the use of Surplus Weapons Plutonium in Mixed Oxide Fuel. PSRA strongly urges that Surplus Weapons Plutonium of all origins/nations be disposed of by other alternative technologies such as vitrification within mixed "High-Level" wastes, and that the disposal process not be linked to the demands made by the Russian government.

The United States is a sovereign nation that still maintains a significant nuclear and conventional advantage over potential non-terrorist threats, and can readily afford to unilaterally dispose of its Surplus Weapons Plutonium without linkage to another nations' programs.

1


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

SUPPLEMENTAL NOTE

In the interest of being fair while researching this report, PSRA attempted to contact participants on both sides of the nuclear issues. Our initial contact attempts were made via e-mail and telephone calls.

Several persons in Ontario Hydro returned our telephone and e-mails, and subsequently allowed us to review documents such as the Bruce NPD Safety Report as a part of our on-site research. Although we were not permitted to photocopy or photograph Ontario Hydro's documents, they did provide a quiet room, candid talk, several technical volumes about their facilities, and permitted us to make written notes of that material.

We found AECL's Mr. Gadsby to be extremely well-versed not only in AECL's project, but also in the political realities of both Russia and the United States. During our telephone conversation Mr. Gadsby stated that "AECL always understood that CANDU Reactors would have to share the MOX program because of political and financial interests of the nuclear power reactor operators in the United States."

PSRA also tried to contact "anti-nuke" organizations. We were not successful, therefore the information presented above is based on the research developed from the cited resources. It is telling that even without the input from anti-nuclear activists, that the information that is currently available has overwhelmingly convinced us that the use of MOX Fuel in CANDU Reactors is not the best disposal option.

MD236

US DOE needs to hear your voice NOW!

- 1. Should Clean Up be the sole mission at Hanford? 1
 Yes No
- 2. Should the United States Government maintain its longstanding policy against the use of weapons Plutonium to fuel civilian nuclear reactors? 2
 Yes No
- 3. Which alternative would you prefer to see the US Department of Energy pursue:
 Immobilization (encasement of plutonium in glass-like tombs) 3
 Or ← THIS, NOT NEITHER
 The MOX plan (burning plutonium to fabricate fuel for use in a civilian nuclear reactor)? IS PERMANENTLY ACCEPTABLE
- 4. Should Plutonium, to be used for processing and fabrication of MOX fuel, be imported to the Hanford site along the Columbia River? 4
 Yes No
- 5. How concerned are you about the transportation of Plutonium through the Northwest?
 Not concerned slightly concerned very concerned completely opposed 5
 B. How concerned are you about the transport through the Northwest of fuel containing weapons Plutonium?
 Not concerned Slightly concerned Very concerned Completely opposed
- 6. Should commercial nuclear power plants be allowed to run on MOX fuel containing weapons Plutonium? 6
 Yes No
 B. Should they be subsidized with tax dollars to do so?
 Yes No
- 7. Should MOX fuel containing weapons Plutonium be used to restart the FFTF reactor at Hanford to produce Tritium for nuclear bombs? 6
 Yes No

Name DAVID REIF
 Address 5205 NE Mallory Portland OR 97211
 Phone 331-3910

Please return this to:
 Hanford Action
 25-6 NW 23rd Place #406
 Portland, OR 97214
 (503) 235-2531

MD291

MD291-1

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.

MD291-2

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.

MD291-3

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.

Under the hybrid approach, 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. Therefore, fabricating all 50 t (55 tons) of surplus plutonium into MOX fuel is not a reasonable alternative and is not analyzed; however, immobilizing all of the surplus plutonium is analyzed. Given the variability in purity of the surplus plutonium to be dispositioned, some of the plutonium currently considered for MOX fuel fabrication may also need to be immobilized. The incremental impacts that would be associated with a small shift in materials throughput are discussed in Section 4.30.

MD291-4

Transportation

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, 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>.

MD291-5**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.

MD291-6**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:

~~Given that the military is responsible for the weapons-grade plutonium or for other plutonium in the production of waste material with the projected technology for safe disposal, I feel it essential that the groups responsible for that production (both commercial and government) pay for the cleanup without further impact on the taxpayer. This to me means existing military budgets should be used for research or development of physical means that truly meet standards for environmental & human safety. Given that private companies have produced long-term solutions, they don't bear the primary burden of cleanup for their mistakes, even at their expense, at their operation.~~

In short, existing profits & budget of the commercial/military nuclear energy experiment are the only funds properly spent to correct the waste disposal problem in a prompt & environmentally safe fashion.

It was seriously stupid to play with this material in any way in the first place. This was all predictable from the onset & we have hurt air health & our planet severely at Chippewa, 3 miles Rocky Flats, Ashford, etc. Why play again with this ignorant MOX program? Shut it down, get rid of it, don't make the victims pay twice.

MD291

MD291-7

Cost

DOE acknowledges the commentor's concern regarding funding responsibility for weapons-grade plutonium disposition and cleanup, and opposition to the MOX approach. Funding for the U.S. surplus plutonium disposition program is allocated annually by Congress, which is committed to the goals and objectives of the program. However, funding policies are beyond the scope of this SPD EIS.

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. To accomplish this 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) Courtney Scott
ADDRESS: 2639 NW Clackamas, Portland OR 97232
TELEPHONE: (503) 287-6142
E-MAIL: scotturk@teleport.com

I am opposed to the use of MOX fuel for nuclear energy in either commercial or military purposes. It is unfortunate that nuclear weapons ever proliferated in this country. Surely the government's problem is cleaning up the waste. I should have as a lesson what the further creation of weapons of mass destruction is. I recommend immobilization as the best solution I have heard of so far. Profit should not play a part in the decision whatsoever. If nuclear power corporations wish to use MOX fuel, at the very least they should pay for it, to take the burden off the taxpayer. I doubt they would agree to that.

If you are unsure about responding to public opinion please contact the Office of Public Comment for assistance. Current plan of action for disposition of surplus plutonium is MOX.

ORD11

ORD11-1

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.

My name is Nick Spurgeon and I live in Portland, Oregon, and I'm leaving a comment about the Hanford nuclear plant and the proposed plans to use the plutonium from warheads for nuclear energy. I think that's insanity. I think the Department of Energy should put its energy into exploring alternative energy sources like solar. Stop spending our money on poison that's going to kill us. I'm really sick of it and I'm really disgusted with it. Thank you.

1

PD038

PD038-1

Other

DOE acknowledges the commentor's opposition to the MOX approach and support of alternative energy sources. 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.

August 18, 1992

Bill Richardson
Secretary of Energy
100 Independence Ave.
Washington, D.C. 20585

Dear Secretary Richardson,

This evening concerned citizens meet with DOE officials to discuss destruction of our nation's surplus weapons plutonium. If the object we seek is to destroy this deadliest of all nuclear elements, we'll turn it into glass. We need to be clear that we have the same objective in mind. The choices under discussion do not bear this out.

The one: to immobilize our entire supply into glass logs. The other: to put 2/3s of this plutonium into MOX fuel for commercial nuclear reactors, a dangerous breach in separation of military weapons production and commercial reactors.

The MOX option is little more than a transit system for moving plutonium - with all of its attendant risks to workers and the public - 100% of plutonium into MOX fuel, 99% plutonium remaining as waste, 1% destroyed.

Because MOX appears to be the DOE's choice, it seems that destruction of plutonium is not its objective. It is hard to understand the DOE's continued advocacy for nuclear power with its nightmare history of accidents. In a 5-city area around the Pilgrim nuclear power plant in Mass., following a silent, invisible accidental release of radioactive gases, the leukemia rate among children is 4 times the national average. To throw a load of plutonium into the fuel of commercial reactors and hope for some kind of safe retrieval of the 99% remaining is insanity.

If MOX is to be used as a means of stockpiling plutonium for future weapons production, should the case be made that preparing for war is the best means for insuring a lasting peace, then that is what we should be talking about.

Why does the DOE continue its single-minded advocacy of nuclear power with its accident-prone history and legacy of overfilling, leaking, explosive-hot waste sites of which Hanford is a prime example? It's time we stopped messing up lives of future generations.

I have a dream that one day in my lifetime the USDOE will advocate for safe, clean, efficient alternative energy sources. What a joyous use of our tax dollars that will be!

Sincerely,
Nancy Lou Tracy
741
741

COPIES TO SENATORS BROWN AND WASHBURN

FD203

FD203-1

Alternatives

DOE acknowledges the commentator's opposition to the MOX approach. 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. 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.

FD203-2

MOX Approach

The DOE acknowledges the commentator's opposition to nuclear power. 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 objective of reactor irradiation is plutonium disposition, not power generation. 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.

FD203-3

DOE Policy

The purpose of the MOX approach is to convert surplus plutonium to a form that meets the Spent Fuel Standard, thereby providing evidence of irreversible disarmament and setting a model for proliferation resistance. 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 U.S. Department of Energy needs to hear you voice NOW!
What do you think about a new era of nuclear proliferation?

Hanford Action of Oregon will forward this questionnaire to USDOE. Please circle your responses.

1. Should clean-up be the sole mission at Hanford?
 Yes No 1
2. Should the United States government maintain its longstanding policy opposing the use of weapons plutonium to fuel civilian nuclear reactors?
 Yes No 2
3. Should commercial nuclear reactors be allowed to run on MOX fuel containing weapons-grade plutonium?
 Yes No 3
- 3a. Should they be subsidized with tax dollars to do so?
 Yes No
4. Which alternative would you prefer to see the U.S. Department of Energy pursue:
Immobilization (encasement of plutonium in glass logs or in casks for entombment) OR
The MOX plan (processing plutonium into fuel for use in civilian nuclear reactors).
4
5. How concerned are you about the transportation of plutonium through the Northwest to Hanford?
Not concerned Slightly Concerned Very Concerned Completely opposed 5
6. How concerned are you about transporting plutonium MOX fuel through the Northwest to Hanford?
Not concerned Slightly Concerned Very Concerned Completely opposed 5
7. Should MOX fuel be used to restart the Fast Flux Test Facility (FFTF), a risky liquid-metal reactor at Hanford, to produce tritium for nuclear bombs?
 Yes No 6

Name Nancy Lou Tracy
Address 7310 SW Pine St. Portland OR 97223
Phone 503-246-6190 e-mail _____

Please return to Hanford Action of Oregon by September 10, 1998.
Hanford Action of Oregon
25-6 NW 23rd Pl #446 tel: (503) 235-2924 fax: (503) 736-0097 e-mail: hanoac@aol.com

7
With what I have twice read is a 400 billion price tag for cleaning up Hanford - we must get on with the job - however overwhelming the odds of complete success. Those businesses which want

MD298

MD298-1

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.

MD298-2

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.

MD298-3

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

Comment Documents and Responses—Oregon

3-487

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.

MD298-4**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.

Under the hybrid approach, 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 the 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. Therefore, fabricating all 50 t (55 tons) of surplus plutonium into MOX fuel is not a reasonable alternative and is not analyzed; however, immobilizing all of the surplus plutonium is analyzed. Given the variability in purity of the surplus plutonium to be dispositioned, some of the plutonium currently considered for MOX fuel fabrication may also need to be immobilized. The incremental impacts that would be associated with a small shift in materials throughput are discussed in Section 4.30.

MD298-5**Transportation**

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, 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>.

MD298-6

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.

to have a second run of profit from plutonium need to be told "no". To impose further risk to commerce and industry of the area is foolhardy. The Columbia River, for many centuries ahead, will not roll on clean, safe and productive as it has for eons past. It is long past time to put plutonium, incredible killer that it is, permanently out of commission.

7

MD298

MD298-7

DOE Policy

As described in Section 4.26.1.2, surface water would not be used in the construction and operation of proposed surplus plutonium disposition facilities at Hanford. In addition, there would be no discharges of contaminated wastewater to the Columbia River. Therefore, no impacts on the Columbia River would be expected.

The remainder of this comment is addressed in response MD298-1.

Hi. My name is Lee Ann Ward and I live in Portland, Oregon, down river from Hanford and I strongly object to the Department of Energy trying to produce fuel or anything else at Hanford and would like to see it cleaned up and nothing more done there. It's destroyed our river and the environment around here and I am very, very much opposed to any further use of Hanford for any production of fuel. Please, just clean up the mess that is there and leave it alone. Thank you.

1

PD037

PD037-1

Alternatives

DOE acknowledges the commentor's opposition to siting the proposed surplus plutonium disposition facilities 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.

1998-010168 Aug 31 P 1:59



United States
Department
of Energy

Comment Form

NAME: (Optional) Rayna Ward
ADDRESS: 2235 N. Alberta Portland, OR 97217
TELEPHONE: () _____
E-MAIL: Rayner1@juno.com

I would like to see a record on one cube in against the MOX program in any form. I think that the best occasion for the future of all plutonium on the Earth would be to activate it and lead it on site, where it can be used with out to be moved anywhere and also avoid one of the most troubled, sidious of our time in the creation, place, & purification of fissile materials of all kind from the concomitant nuclear waste generated through. Despite the same, complex, extensive & many modern technologies, there is no viable solution to fix these problems at present. Nuclear power in all its forms is responsible for massive pollution of the earth, we disregard because and daily, the government's indifference/bureaucratic preservation attempts, and with a long. Though I am thankful that, at least, we will not have to face MOX yet, though I am alarmed in any situation we are with united states of world face. The aspects of MOX it is an excellent way to keep nuclear waste from being for us to deal with. The transportation problem alone is an obstacle I have these materials, and it's united, generally, hopefully. But it won't hold any breath, a more enlightened future people will be able to solve the problem or united the world's people use over, in the case of plutonium, some P.S. I don't buy the "what if the Russians make double argument but it's time to stop trying to frighten people into going along with some policies. The U.S. should set a good example, in choosing any all use of fissile materials including nuclear fuel and medical isotopes.

MD164

MD164-1

Alternatives

DOE acknowledges the commentator's opposition to the MOX approach. 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.

The surplus plutonium disposition program is limited exclusively to U.S. surplus plutonium and not to foreign plutonium. 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. 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.

Yes, hello my name is Mona Warner. I'm calling from Oregon and I would like to express my opposition to the MOX plan to use fuel for making energy. I really feel very strongly that this is a bad idea. It's a lot, it will cost a lot more, the disposition is close, it's a lot slower and it possesses a much greater possibility of proliferation of nuclear power and I really would like to encourage anyone who is in any position to stop the idea of the generation of this fuel. And I think we should have it in storage and put it away until we can figure it out, figure out what to do with it safely and so that it is not helping proliferate nuclear, what could be eventually nuclear war, who knows. But I would like and, and I would like to express that feeling. Thank you very much. Good-bye.

1

PD048

PD048-1

Alternatives

DOE acknowledges the commentator's opposition to the MOX approach. The use of MOX fuel in domestic, commercial reactors is not proposed in order to produce energy. 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 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. 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. Converting the surplus plutonium to more proliferation-resistant forms allows a lesser, albeit still high degree of custodial care than maintaining facilities for the material in its current form. 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

9-3-98

NAME: (Optional) Holly Whitney
ADDRESS: 2235 N. Alberta St.
TELEPHONE: (503)
E-MAIL: hollywit@juno.com

1 I attended the MOX hearing that was held in Portland, OR, last month. I noted that a lot of befuddling and complex jargon was used in the initial presentation. If these hearings are ever going to be truly "public", the language should be simplified. In addition, where are these hearings being advertised? Public airwaves? Why not? Public television? Why not? How about using some of the main-stream AM radio stations to advertise? 2

I am opposed to the MOX proposal for 2 reasons:
3 A) the transportation of radioactive waste is not safe (especially from Russia!)
B) I want the waste stream to END NOW. No more processing, no more emissions.

4 I would like to see vitrification of all existing waste, without transporting it.
5 Lots of Americans are dying of cancer, and we know that radiation is linked. Let's get wise.

Thank you,
Holly Whitney

MD160

MD160-1

General SPD EIS and NEPA Process

DOE has and will continue to work toward the goal of presenting technical information, in writing or verbally, in readily understandable language and avoid the use of jargon (technical slang). Specifically, the aim is to provide information at a high school comprehension level. Because the disposition of surplus plutonium is a technically complex program, DOE must use some scientific and technical terms in order to accurately describe how DOE proposes to dispose of surplus plutonium, and the environmental effects of taking those actions.

MD160-2

General SPD EIS and NEPA Process

For all public hearings, DOE placed ads in large-circulation newspapers in the hearing and public radio provided public announcements for area commercial and public radio stations. Notification was also provided by means of mailing lists, Web site announcements, and bulletin boards at each DOE site. Individual notices were also mailed to over 5,000 members of the public who had expressed an interest in the program.

MD160-3

Transportation

DOE acknowledges the commentator's opposition to the MOX approach and transportation of MOX fuel. Surplus plutonium would be shipped from Russia to the United States as a result of the alternatives being evaluated in this SPD EIS. 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.

DOE is committed to waste minimization and pollution prevention and is doing everything in its power to limit the amount of waste that would be

generated during this process. As described in Section 2.18.3, the potential impacts of waste generation and emissions due to the MOX approach are expected to be minor.

MD160-4

Alternatives

DOE acknowledges the commentor's preference for immobilization in glass at the site where it is currently located. This EIS evaluates the environmental impacts of immobilization in ceramic and glass at Hanford and SRS. The option of immobilization was considered in the *Storage and Disposition PEIS*, but only Hanford and SRS were chosen in the ROD because these sites have, or are scheduled to have, the infrastructure to provide the needed HLW or cesium radiation barrier to make the immobilized plutonium 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.

MD160-5

Alternatives

The Atomic Energy Act of 1954 authorizes DOE to establish standards to protect health or minimize dangers to life. Radiation protection standards are based on controlling radioactive releases to ALARA levels in recognition of the potential risk of radiation exposure. The extremely small cancer risks presented in this SPD EIS are a direct result of the small quantities of material (e.g., plutonium) expected to be released from the proposed facilities. Calculation of these cancer risks is based on methodologies presented in *Health Effects of Exposure to Low Levels of Ionizing Radiation*, BEIR V (1990).

WOMAN'S INTERNATIONAL LEAGUE FOR PEACE AND FREEDOM
 BARBARA DRAGEAUX
 PAGE 1 OF 1



Women's International League for Peace and Freedom
 PORTLAND BRANCH
 1819 NW Everett, Portland, OR 97209
 (503) 224-5190

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 Mary Howe
 Barbara Drageaux

SECRETARY
 Olive Watt

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 fax: 41-22-740-16-83

August 18, 1998

RE: Surplus Plutonium Disposal

I'm speaking as co-chair of WILPF (Women's International League for Peace and Freedom). Our ROI (Region of Influence) includes more than 42 National Sections around the world. I believe that I can represent the position of our members as against the use of plutonium for the production of energy, for weapons or any other active use. We insist that the only proper future for plutonium is containment in a permanently unuseable form such as vitrification.

Re-ordering the U.S. Federal budget has long been a priority of U.S. WILPF. WILPF has developed a "Women's Budget" in the past and an updated version is currently being prepared. It is my view that Longsuffering Citizen Funders are not interested in seeing their tax assessments used to further the goals of Maximally Enriched Institutions whose demands for federal dollars encourage the use of this dangerous substance in yet to be designed (at government expense) facilities. To continue to bill us for the risky transport of plutonium and its proposed by-products (such as MOX) back and forth across the country; to continue to impose on us the cost of the dealing with the resulting waste; and to add to the wealth of corporate vultures at our expense is beyond reason. Our NOI (Notice of Intent) is that we will gather all the resources within our ROI to demand that weapons plutonium be properly and permanently disposed of . . . at Hanford, in the northwest and anywhere else in the U.S.

Barbara Drageaux, co-chair
 WILPF: Portland Branch
 4811 NE 31
 Portland, OR 97211
 503-284-3116

ORD08

ORD08-1

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.

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 in Chapter 4 of Volume I and Appendix L.

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.

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.

July 28, 1998

Dear Department of Energy:

Like other people, my view of Hanford is
 cleanup of nuclear waste. Our country
 doesn't need surplus plutonium
 DOE spent billion dollars deal
 with British company to build
 recycling waste into glass with
 this system.

Jane Wood
 Portland, OR

1

MD005

MD005-1

Purpose and Need

DOE acknowledges the commentor's opposition to new missions 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.

Dear Email submission. Sept. 15 11:30 pm PDT. I was in attendance at the Portland, Oregon, public meeting on the SPD EIS, although I did not speak at that meeting. I ask that the following be considered as my comment on the subject.

I am opposed to a policy of Mixed Oxide Fuels processing, this is an expensive non-solution to the problem of nuclear waste. MOX is perpetrated primarily by those who will profit economically from it.

In the long run, it will be far more more expensive in dollars and ultimate human misery than declaring Plutonium a waste and diligently setting the good example of entombing it with reliable oversight. It is now well known that MOX programs will result in a large net increase in nuclear waste, and will encourage similar practices worldwide by people even less well prepared than ourselves to attempt such folly.

Also I do not want to allow anything but active waste clean-up to occur at the Hanford, Washington site. Hanford, though over 120 miles distant from the 3 million people in the Portland metro area, will be a real threat to long term livability in our beloved region unless a competent clean up program is conceived, adhered to, and fully carried out. (As someone who has observed and followed events at Hanford for over fifteen years, I say "Yes, the pro-nuclear zealots have backed off a bit, but they still desire to make their fortunes in the same misguided way; by devising ever more elaborate and unworkable schemes to make use of an inherently dirty and dangerous power source that is even now only barely understood because it's real damage is

WD022

1

2

WD022-1

MOX Approach

DOE acknowledges the commentator's opposition to the MOX approach. 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.

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 cost and schedule 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.

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 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. 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.

done over TIME, something that humans cannot buy, make, or ultimately control.”

Please have the foresight to realize, the solution to high level waste is clean-up, vitrification, or some other carefully controlled entombment, and the active persuasion of other countries to do the same.

Thank you.
Brad Yazzolino
Portland, Oregon

2

WD022

WD022-2

Alternatives

DOE acknowledges the commentor's opposition for siting the proposed surplus plutonium disposition facilities 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.



United States
 Department of Energy
Pre-Registration Fax Form

**SURPLUS PLUTONIUM DISPOSITION DRAFT
 ENVIRONMENTAL IMPACT STATEMENT PUBLIC MEETING**

- | | | |
|---|--|--|
| 1 | August 4, 1998
Richland, WA (Hanford) | <input type="checkbox"/> Afternoon Workshop - 1:00PM - 4:00PM
<input type="checkbox"/> Evening Workshop - 6:00PM - 9:00PM |
| | August 11, 1998
Amarillo, TX (Pantex Plant) | <input type="checkbox"/> Afternoon Workshop - 1:00PM - 4:00PM
<input type="checkbox"/> Evening Workshop - 6:00PM - 9:00PM |
| | August 13, 1998
North Augusta, SC (SRS) | <input type="checkbox"/> Afternoon Workshop - 1:00PM - 4:00PM
<input type="checkbox"/> Evening Workshop - 6:00PM - 9:00PM |
| | August 18, 1998
Portland, OR | <input type="checkbox"/> Afternoon Workshop - 1:00PM - 4:00PM
<input type="checkbox"/> Evening Workshop - 6:00PM - 9:00PM |
| 2 | August 20, 1998
Idaho Falls, ID (INEEL) | <input type="checkbox"/> Afternoon Workshop - 1:00PM - 4:00PM
<input type="checkbox"/> Evening Workshop - 6:00PM - 9:00PM |

When is the
 public meeting
 in Washington, DC?
 The Disposition may
 affect all or
 many nuclear
 reactors and
 the LLBN.

Please provide the following information to register for the public meetings on the Surplus Plutonium Disposition Draft Environmental Impact Statement. Fax your completed form to 1-800-820-5156. If necessary, make copies so there is only one participant per form. If further assistance is required or if you have any questions, please call 1-800-820-5156 and leave a message. A representative will return your call.

Mr. Mrs. Ms. Dr. Judith Johnsrud
(first name) (last name)

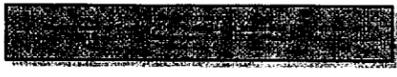
TITLE: Director [and Sierra Club National Nuclear Waste Task Force]

ORGANIZATION: Environmental Coalition on Nuclear Power

MAIL ADDRESS: 433 Orlando Ave.
(street/post office box)
State College PA 16803
(city) (state) (zip code)

TELEPHONE: (814) 237-3900 FAX: (814) 237-5700

E-MAIL ADDRESS: johnsrud@cslink.net



MD016

MD016-1

General SPD EIS and NEPA Process

DOE held public hearings near the potentially affected DOE sites and Washington, D.C. 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. Approximately 1,300 copies of the Supplement to the SPD Draft EIS were mailed, and an NOA postcard was mailed to an additional 5,800 members of the public. Several means were available 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.

MD016-2

Waste Management

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. Also, if the MOX approach is selected in the ROD for this SPD EIS, plutonium disposition is proposed to occur in three domestic, commercial nuclear reactors. Commercial nuclear reactors that were not selected would see no changes to their current operations.

Look, this is insane to think you are getting my comment, my comment. Lord help us! That's a hell of a comment. Of course, I understand that the disposing of plutonium is now up to 50 metric tons! Why they call 50 metric I don't know. 50 metric tons is pretty close to 50 long tons. And this is an insane amount and it sure is insane to put it in civilian reactors, commercial reactors. Any terrorist group can get a hold of it they don't have to make it into a bomb. Plutonium is a terrorist weapon just by its very existence. Commercial reactors don't have the kind of where with all to protect something like that. And I'm not even sure the U.S. Government has something to protect, the where with all to protect it. This is very insane. God help us. Respectfully submitted, Marvin Lewis.

1

PD002

PD002-1**Nonproliferation**

DOE acknowledges the commentor's opposition to the MOX approach to surplus plutonium disposition based on concerns regarding theft and diversion. 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 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 facilities would be implemented 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.

1998-008457 Julv 15 A 9:49



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July 11, 1998

President Bill Clinton
The White House
Washington, D.C. 20500

cc *Frederico Perna, Secretary*
DOE

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WAD08-1

MOX Approach

DOE acknowledges the commentator's opposition to the MOX approach and support of the immobilization 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 and immobilizing the plutonium are effective ways 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. Both approaches would require the handling and transportation of the surplus plutonium. Transportation of special nuclear materials 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.

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.

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

Comment Documents and Responses—Pennsylvania

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.

WAD08-2

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.

Qualification criteria used to select the domestic, commercial reactors stipulates that the reactors must be able to complete the surplus plutonium disposition program within their operational life as dictated by their licenses. 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.

cutting initiatives of nuclear utilities. We believe nuclear power should be allowed a respectful closure now, without providing huge public moneys to prop it up for utilizing the surplus plutonium disposition (that should be disposed of in a better way, anyway).

2

We are worried that the technology proposed by the MOX-consortium-hopefuls ("Plutonium Oxide Polishing") could result in the resumption of reprocessing, though of course under some euphemistic other name. Our scientists have already tried and rightfully rejected reprocessing. Back in the 1960's reprocessing was shut down because of its great danger, its generation of such huge quantities of radioactive waste, its colossal cost, and proliferation concerns. Nothing has changed. Do not allow reprocessing to be resumed, under any name.

3

We believe the institutional pressures exist that would use MOX as the bridge to the plutonium economy, long envisioned by nuclear promoters. A plutonium economy would provide a field day for proliferation opportunities, and spell doom for our hopes for a healthy environment.

We urge your strong opposition to wasting any further public moneys on a technology (MOX) that has as many pitfalls, and which has far more negatives than the immobilization option. Oppose MOX before it gets started.

Thank you for your serious consideration. Please address any correspondence to my address below.

Sincerely,



Patricia T. Birnie, Chair
WILPF Environment Committee
5349 W. Bar X Street
Tucson, AZ 85713

cc: Secretary of Energy
Chairman of the Nuclear Regulatory Commission

Enclosure: Lead Editorial of 6-27-98 LA Times

WAD08

WAD08-3

DOE Policy

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.

LOS ANGELES TIMES SATURDAY, JUNE 21, 1998

LOS ANGELES TIMES EDITORIALS



MARK H. WILLES, Publisher
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MICHAEL PARES, Editor and Senior Vice President
JANET CLAYTON, Editor of the Editorial Page and Vice President

Keep Rein on Plutonium

U.S. must not let a market develop for this substance

One of the knotty little problems that U.N. Secretary-General Kofi Annan has to solve is how to dispose of the surplus plutonium that the United States has accumulated since the end of World War II. The problem is that the plutonium is a highly radioactive material that can be used to make nuclear weapons. The United States has about 20 tons of surplus plutonium, and it is estimated that there are about 10,000 tons of plutonium in the world.

The American strategy is to get the Russians to dispose of their plutonium surplus. The strategy is to get the Russians to agree to use the MOX process, a process known as vitrification. The process involves mixing plutonium with uranium waste and melting the mix into glass or ceramic material at extremely high temperatures. The process is known as vitrification. The process is known as vitrification. The process is known as vitrification.

Washington argued that the MOX process is the only way to dispose of surplus plutonium. The MOX process is a process known as vitrification. The process involves mixing plutonium with uranium waste and melting the mix into glass or ceramic material at extremely high temperatures. The process is known as vitrification. The process is known as vitrification.

But if the United States is to officially preach nuclear nonproliferation, it should be leading the way in making materials. The MOX process is a process known as vitrification. The process involves mixing plutonium with uranium waste and melting the mix into glass or ceramic material at extremely high temperatures. The process is known as vitrification. The process is known as vitrification.

Back in 1984, a special panel of the National Academy of Sciences recommended a "no-track" approach to surplus plutonium. The MOX process is a process known as vitrification. The process involves mixing plutonium with uranium waste and melting the mix into glass or ceramic material at extremely high temperatures. The process is known as vitrification. The process is known as vitrification.

WAD08

DOE Plutonium Disposition Public Meeting
Thursday, 8/13/98
W. Barry Adams

Ladies and gentlemen, my name is Barry Adams. I am a banker, a life long resident of the CSRA, a board member of the Aiken Chamber of Commerce, and a concerned citizen.

Please know that I cannot testify to you today due to my understanding of nuclear technology and, in particular, my knowledge of plutonium disposition. While not beyond my interest these are subjects that I will never even pretend to understand. I am positive though, that a number of specialists and engineers have and will present to you very qualified testimonies of why SRS is technically the best choice for the complete plutonium disposition mission.

Neither can I testify to you today concerning the economic issues involved in your selection process. The budgets involved are far more complex than the budgets with which I deal. Just as from the technical aspect however, I am positive that you have and will hear compelling arguments as to why the selection of SRS is the best choice for the pit assembly and conversion mission and will save taxpayers billions of dollars.

But I can testify to you today of the confidence that I and my family have in the scientists, engineers, technicians, accountants, and managers that operate SRS. And I will tell you publicly that we believe that there is no finer or better qualified group of men and women in the world to accept and successfully carry out this mission than these proven professionals.

This simple opinion, one that is shared throughout the CSRA, could be the most critical of all of the factors that will influence your decision. While it is true that SRS is the technical and financial leader of any potential site, it is also true that there is no other location in the United States where common citizens, such as me, have such faith and trust in the abilities of the operators of a DOE site. The communities of the CSRA overwhelmingly support SRS and its missions and this unprecedented community support has not, will not, and cannot be duplicated anywhere.

I encourage you to give high value to the 40 plus years of support that SRS and DOE have received from the citizens of South Carolina and Georgia and assign to SRS the pit disassembly and conversion mission.

SCD03

SCD03-1

Alternatives

DOE acknowledges the commentator's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



City of Aiken

South Carolina

Post Office Box 1777
Aiken, S.C. 29802

RESOLUTION
SUPPORTING THE TEMPORARY STORAGE OF
PLUTONIUM FOR THE PURPOSES OF PROCESSING AND VITRIFICATION

WHEREAS, the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States;

WHEREAS, plutonium reprocessing represents one of the most certain future missions of the United States Department of Energy for the next 20 or 30 years;

WHEREAS, the Savannah River site has produced approximately 40% of all U.S. weapons grade plutonium over the past 45 years and has safely handled plutonium and glove-box processing equipment with little or no adverse impact on workers, the public, or the environment;

WHEREAS, the Department of Energy and its record of decision recognizes the Savannah River Site as "a plutonium competent site with the most modern, state of the art storage and processing facilities...with the only remaining large-scale chemical separation and processing capability in the Department of Energy complex";

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF AIKEN THAT:

The City Council for the City of Aiken does endorse major plutonium missions for the Savannah River Site, and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management, processing, and temporary storage.

ADOPTED this 24th day of February, 1997, at Aiken, South Carolina.

Fred B. Cavanaugh
Mayor

<i>Ran M. Boudreau</i> Councilmember	<i>Beverly D. Clyburn</i> Councilmember
<i>Michael Anderson</i> Councilmember	<i>Chris H. Gandy</i> Councilmember
<i>William B. Price</i> Councilmember	<i>Lewis B. Price</i> Councilmember

City Attorney - (803)642-7654 Finance - (803)642-7600 FAX - (803)642-7646 City Manager - (803)642-7654
Planning - (803)642-7678 Public Safety - (803)642-7620

SCD102

SCD102-1

Alternatives

DOE acknowledges the commentors' support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.

DOE Hearing-Plutonium Disposition
North Augusta, SC
8/13/88

Good afternoon. Mr./Ms. Chairman and Committee Members, my name is Fred B. Cavanaugh, Jr. and I'm very fortunate to be Mayor of the City of Aiken. As Mayor of Aiken, I'm proud to be representing our city's elected officials, staff and citizens when I tell you that we support the Pit Disassembly and Conversion mission at the Savannah River Site (SRS).

As we know, SRS has been selected as the preferred site for Mixed Oxide (MOX) Fuel and Immobilization missions because it has the expertise and infrastructure needed to bring the disposition of plutonium to successful completion.

The Savannah River Site, its dedicated employees, and the people in the Central Savannah River Area (CSRA) supported our nation's Cold War efforts for nearly fifty (50) years by helping to create our country's nuclear defenses. We are now prepared to complete the job President Truman entrusted to us so long ago...making our world a safer place to live.

When it comes to plutonium handling there is no safer facility than SRS, and as far as community support, there is no other site that enjoys as much support as SRS. Year after year on our CSRA trips (some 45 people strong) to visit our legislative delegations and the DOE in Washington, we hear DOE agree that SRS has the strongest community support.

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SCD48

SCD48-1

Alternatives

DOE acknowledges the commentator's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

putting the new production reactor at the Savannah River Site. "I think we are the best location," said Georgia Democrat Sam Nunn, referring to SRS. "We have the best people, we have the most infrastructure to deal with it."

1991 - Another article from the Augusta Herald printed a statement from U.S. Representative Butler Derrick, Dem.-S.C., saying, "This is the friendliest place in the country to further development in nuclear production. The people want it. The people in the area feel comfortable with it. As the DOE consolidates nuclear facilities, I think SRS will become one of those consolidation sites."

During the same time frame then Governor Campbell of S.C. sent a letter to the Chief of Staff of President George Bush stating, "I express my support for locating the NWCRS at SRS. The SRS is the optimum location for several reasons..." "All ingredients for a successful relocation of the NWCRS to SRS are in place. My office is ready and willing to work closely with you to this end." And the S.C. Congressional Delegation unanimously endorsed locating the NWCRS at SRS, stating, "The objective of the National Defense Authorization Act is to create Complex-21, a facility more compact, less diverse, and less expensive to operate than the complex of today. We feel these objectives will best be achieved in a timely and cost efficient manner at the Savannah River Site."

These are but a few of the earlier endorsements of the SRS, and it is quite obvious that the support continues to be strong. As a more recent indication I'd like to read the Resolution from the Aiken City

SCD48

Since moving to Aiken in 1953, I've seen the community support grow. To show that we are not a 'Johnny come lately' when we talk about support, I'd like to share just a few examples of support dating as far back as 1980.

1980 - An Oak Ridge National Laboratory and Oak Ridge Associated Universities poll was positive toward SRS.

1987 - A joint resolution passed by the SC General Assembly stated, "Be it resolved by the Senate, the House of Representatives concurring, that the U.S. Department of Energy is hereby requested to designate its Savannah River Plant as the site for the New Production Reactor."

1988 - A University of South Carolina at Aiken Survey Research Services poll was positive toward SRS.

1990 - An editorial from the Aiken Standard Newspaper stated, "While Savannah River has not been free from environmental problems, it has handled them expeditiously and has enjoyed friendly relations with the surrounding communities, which actively support its continued operation. As taxpayers and citizens we believe SRS should occupy a key position in the implementation of Complex 21 (this had to do with the Nuclear Weapons Complex Reconfiguration Initiative).

1991 - An article from the Augusta Herald stated, "Nunn joins backers of the new reactor at SRS." Georgia's senior U.S. Senator said that he favors

SCD48

Council on August 10th, 1998 (resolution attached for the record).

In closing I'd just like to say that all we want is the best for our country and we think the best place for the Plut Disassembly and Conversion mission to be successful is the SRS.

Thank you,

Fred B. Cavanaugh
Fred B. Cavanaugh

1

SCD48



City of Aiken

Ped. Office, Box 1177
Aiken, S.C. 29802



1997

SUPPORTING THE PIT DISASSEMBLY AND CONVERSION MISSION
BEING LOCATED AT SAVANNAH RIVER SITE
RESOLUTION

WHEREAS, the Savannah River Site has demonstrated a continued strong leadership role in this nation's national security since the inception of the site; and

WHEREAS, the professional management team and employees of the Savannah River Site have the proven experience for continuing in this leadership role; and

WHEREAS, the Department of Energy has recognized the importance of and demonstrated their faith in the Savannah River Site by its decisions to locate the MOX and Immobilization missions there; and

WHEREAS, the location of the third element of the plutonium disposition mission, pit disassembly and conversion, is now being reviewed by the Department of Energy; and

WHEREAS, the Savannah River site is the only site being considered with the on site experience of processing plutonium and with the necessary infrastructure required for this critical mission;

NOW, THEREFORE BE IT RESOLVED by the Mayor and City Council, in meeting duly assembled and by the authority thereof, and on behalf of the citizens of the City of Aiken, that the Department of Energy is urged to select the Savannah River Site for its pit disassembly and conversion mission.

BE IT FURTHER RESOLVED that the citizens of Aiken are encouraged to attend the Department of Energy pit conversion mission on Monday, August 13, 1998, at 1:00 p.m. or 6:00 p.m. in the Aiken Civic Center and to voice their support for locating the pit disassembly and conversion mission at the Savannah River Site.

DONE, RATIFIED AND ADOPTED by the Mayor and City Council of the City of Aiken, South Carolina, on this 10th day of August, 1998.

Michael Umack
Council Member

Fred B. Cavanaugh
Mayor

Kevin J. Caldwell
Council Member

Fred B. Cavanaugh
Council Member

Barry J. Chylbas
City Manager

City Manager - (803)642-7654 • Finance - (803)642-7690 • Legal/City Attorney - (803)642-7654 • Planning - (803)642-7690
Public Safety - (803)642-7629 • Public Works - (803)642-7610 • Recreation - (803)642-7630 • FAX - (803)642-7646
<http://www.aiken.net>

SCD48

Augusta Herald 8-13-78

Rally for SRS mission

Today on Page 5A, you can read the Amarillo, Texas, newspaper's call for residents to show up at public hearings to support new missions for the Pantex nuclear weapons plant. Despite what the editorial says, these missions are clearly better suited for the Savannah River Site.

The Department of Energy has already chosen SRS as the preferred site to convert waste plutonium into mixed oxide fuel (MOX) to power commercial nuclear reactors or into a form suitable for disposal in high-level waste canisters.

The plutonium disposition project, which the Amarillo editorial addresses, goes hand-in-glove with missions the DOE is already recommending for SRS. Locating it in Am-

arillo might be great for the economy there — but a net loss for national taxpayers who would save millions if SRS hosts all three projects.

The expensive basic infrastructure for this work already exists at the Aiken area plant but would have to be built from scratch at Pantex.

But, as noted before in this space, politics, not common sense or taxpayer savings, will decide where the pit disassembly project goes.

This is why it's important for people on both sides of the Savannah River to rally behind SRS in DOE-sponsored public hearings slated today at 1 and 6 p.m. at the North Augusta Community Center on the corner of East Buena Vista Avenue and Brookside Drive.

SCD48

DOE PLUTONIUM DISPOSITION
PUBLIC MEETING
August 13, 1998
North Augusta, SC Community Center

Statement by: Teresa H. Haas
Chairperson, Aiken, SC Chamber of Commerce
Board of Directors

- My name is Teresa Haas and I am Chairperson of the Aiken Chamber of Commerce Board of Directors.
- During the public meeting at Pantex, We understand that you heard a great deal of SRS bashing.
- We don't do business that way and prefer to take the high road.
- We'll focus our comments on the reasons why this mission should be located at SRS.
- We are here in behalf of 5 Chambers of Commerce from SC & GA.
- Collectively we represent over 3000 businesses and some 1/2 million people.
- This past April, over 50 individuals and elected officials from our Chambers of Commerce traveled to Washington.
- We were pleased to meet w/Secretary Peña, Deputy Secretary Moler, and other DOE officials to discuss several issues pertaining to the Savannah River Site.
- The Plutonium Disposition Mission, and in particular, the Pit Disassembly and Conversion component, was a primary topic of our discussion with the Secretary.

SCD36

- As we stated then, we strongly support the location of this mission at SRS. The Board of Directors of these Chambers have passed numerous resolutions supporting the Pit Disassembly and Conversion mission at SRS.
- Our support for this particular mission is based upon several reasons:
 - 1) SRS' unique expertise and experience in handling plutonium;
 - 2) SRS' unmatched safety record in the DOE Complex; and,
 - 3) From a business standpoint, we are highly interested in saving dollars for the taxpayers of this country.
- We understand there is a cost savings of at least \$60 million by locating Pit Disassembly and Conversion at SRS. By our standards, that's a lot of money.
- Simply stated, SRS has demonstrated its technical and human resource leadership. That expertise combined with unequaled regional support from 2 states is a powerful combination which can benefit DOE in addressing critical, non-proliferation, material disposition, clean-up and national security challenges for our nation.

SCD36

SCD36-1

Alternatives

DOE acknowledges the commentor's support for siting the pit conversion facility at SRS. DOE believes that all the candidate sites are suitable from an operational, community support, and safety standpoint. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

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 at SRS 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.

Aiken Chamber of Commerce
400 Laurens Street, Northeast • P.O. Box 682 • Aiken, South Carolina 29802
(803) 641-1111 • FAX (803) 641-4174

JUNE MURFF
President

RESOLUTION

WHEREAS the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

WHEREAS plutonium disposition represents one of the most certain future missions of the DOE for the next 20 to 30 years; and

WHEREAS the Department of Energy has decided to pursue a dual path for plutonium disposition and has named the Savannah River Site as a candidate site for both options; and

WHEREAS the Savannah River Site has produced approximately 40 percent of all US weapons grade plutonium over the last 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public or the environment; and

WHEREAS the Department of Energy in its Record of Decision recognizes the Savannah River Site as "a plutonium competent site with the most modern, state-of-the-art storage and processing facilities...with the only remaining large-scale chemical separation and processing capability in the DOE complex", and

WHEREAS the regional community in the Central Savannah River Area (CSRA) of South Carolina and Georgia strongly supports continued plutonium missions for the Department of Energy's Savannah River Site;

NOW BE IT RESOLVED that the Aiken Chamber of Commerce strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.

APPROVED this 19th day of February 1997 at Aiken, South Carolina, by the Aiken Chamber of Commerce.

The Partner Every Business Needs!


SCD83

SCD83-1

Alternatives

DOE acknowledges the commentors' support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.

3-517

Comment Documents and Responses—South Carolina

Good afternoon, my name is Jeff Spears and I am here representing the Greater Aiken Chamber of Commerce as its Vice Chairman for Economic Development. Additionally, I am a Senior Vice President with NationsBank with responsibilities in Augusta, Aiken, North Augusta, Barnwell, Allendale, Edgefield, and Orangeburg; in essence all the towns and communities that have supported the mission of SRS for now almost 50 years. As a graduate of the Aiken County Public School System and a resident of this community for nearly 25 years, I have grown to respect the Savannah River Site as a dedicated, well managed, and safe DOE facility that has the respect and confidence of the 450,000 citizens that live in this area. As a businessman traveling throughout the areas bordering SRS and with my recent work with Aiken's Chamber of Commerce, I am also respectful of the economic viability that SRS brings to this region.

I must confess that where I know a lot about banking I fall well short when it comes to standing before you and discussing Plutonium Disassembly and Conversion of Plutonium. But as a business

SCD35

person and a tax paying citizen of the United States I would like to (make or reiterate) a few important point.

1. It is my understanding that Plutonium Disposition Mission at SRS could save tax payers 1.6 billion in avoided cost verses locating this mission at another DOE facility.

2. Additionally I understand that the third element; Pit Disassembly could save at least 60 million dollars if located at SRS.

3. I have also learned that DOE has acknowledged SRS's history and expertise in handling Plutonium verses that of other DOE sights making SRS the site of chose for all elements of Plutonium Disposition.

4. By living here so many years I am also knowledgeable of SRS's safety record and DOE's recognition of SRS as one of their safest sites of all DOE complexes.

5. And last I am sure you are impressed with the community support that both SC and GA has given to SRS for nearly 50 years that will continue with new missions in the future.

So, with cost saving to the US government, historical expertise in

SCD35

SCD35-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. DOE believes that all the candidate sites are suitable from an operational, community support, and safety standpoint. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

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 at SRS 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.

handling Plutonium, an unprecedented safety record at SRS, and
the overwhelming community support for past and future
missions, I feel DOE has a relatively easy chose in selecting SRS
as the recipient of the third element of Plutonium Disposition
being Pit Disassembly and Conversion.

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Thank you for your time.

SCD35



Aiken County Commission for Technical Education
Post Office Box 696 Aiken, South Carolina 29802

**RESOLUTION IN SUPPORT OF THE PLUTONIUM MISSION AT
THE SAVANNAH RIVER SITE**

WHEREAS, the Department of Energy has already chosen the Savannah River Site as the site for MOX Fuel Fabrication and Immobilization because of the site's capabilities as the Department of Energy's only operating plutonium processing site; and,

WHEREAS, plutonium disposition represents one of the most certain future missions of the U.S. Department of Energy for the next 20 to 30 years; and,

WHEREAS, the safe production and handling of plutonium has been a hallmark of the work performed at the Savannah River Site for many years; and,

WHEREAS, consolidating all three of the new plutonium disposition facilities, including the Pit Disassembly and Conversion Facility, at the Savannah River Site would save at least \$1.6 billion, compared to establishing and maintaining the required capabilities at other sites; and,

WHEREAS, the Savannah River Site has produced approximately 40 percent of all U.S. weapons grade plutonium over the last 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public, or the environment; and,

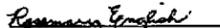
WHEREAS, no site in the Department of Energy Complex can claim a higher level of productivity or a more outstanding safety record than the Savannah River Site;

THEN BE IT RESOLVED: that the Aiken County Commission for Technical and Comprehensive Education strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in Mixed Oxide Fuel Fabrication, Immobilization, and Pit Disassembly and Conversion; and,

BE IT FURTHER RESOLVED: that the Aiken County Commission for Technical and Comprehensive Education will commit its resources through Aiken Technical College to the successful development of a skilled workforce and a community capable of supporting this important mission for the nation.

APPROVED this 10th day of August 1998 at Aiken, South Carolina, by the Aiken County Commission for Technical and Comprehensive Education.


Joe W. DeVore, Chairman


Rosemary English, Secretary

SCD79

SCD79-1

Alternatives

DOE acknowledges the commentors' support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

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 at SRS 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.

AIKEN COUNTY COMMISSION ON HIGHER EDUCATION
RESOLUTION WITH REGARD TO PLUTONIUM MISSION
AT THE SAVANNAH RIVER SITE

WHEREAS, the Savannah River Site has been an integral part of the nation's nuclear defense mission since its inception in 1954; and,

WHEREAS, the safe production and handling of plutonium has been a hallmark of the work performed at SRS for many years; and,

WHEREAS, the proven plutonium-handling experience of the professionals at the Savannah River Site is unmatched by any other site under consideration for this mission; and,

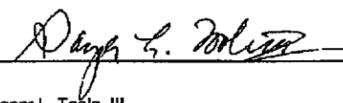
WHEREAS, the decision to place the "Pit Disassembly and Conversion" Mission at the Savannah River Site can save the Federal budget as much as \$1.6 billion as a result of existing facilities and infrastructure; and,

WHEREAS, no site in the Department of Energy Complex can claim a higher level of productivity or a more outstanding safety record than the Savannah River Site;

THEN BE IT RESOLVED: that the Aiken County Commission for Higher Education hereby endorses the addition of the "Pit Disassembly and Conversion" Mission to the MOX Fuel Facility and Plutonium Immobilization Mission approved for the Savannah River Site; and,

BE IT FURTHER RESOLVED: that the Aiken County Commission will commit its resources through the University of South Carolina Aiken campus to the successful development of a skilled workforce and a community capable of supporting this important mission for the nation.

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Gasper L. Toole, III
Chairman

August 13, 1998

Date

SCD92

SCD92-1

Alternatives

DOE acknowledges the commentors' support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

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 at SRS 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.

Comments for DOE

I am Ronnie Young, Chairman Aiken County Council. On behalf of the Aiken County Council I would like to offer a few comments. I am here as someone who was born and raised right here in Aiken County. I am also here because so many of my neighbors here in Aiken County work at the Savannah River site. In fact, more SRS workers live in Aiken County than any where else.

I've watched the developments at the Savannah River Site for my entire life (well, its entire life). I've learned that the people who work at the Site are dedicated to the safe operation of the facility. I guess knowing the people so well has taught me to respect the importance of having the right people taking care of such a vital mission. These people have a long history of handling plutonium and this experience can not be replicated without an immense investment of time and money.

Why would the DOE consider another facility when the Savannah River Site is prepared to take on the Pit Disassembly and Conversion mission. This preparation has been taking place for nearly fifty years.

On behalf of the Aiken County Council, I would like to re-enter into the record the resolution passed by our Council on March 5, 1997 in support of the plutonium disposition missions at the Savannah River Site.

*Ronnie Young
Chairman
Aiken County Council*

SCD12

SCD12-1

Alternatives

DOE acknowledges the commentor's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

Sponsor(s) : County Council
Committee Referral : N/A
Committee Consideration Date: N/A
Committee Recommendation : N/A
Effective Date : March 5, 1997

RESOLUTION NO. 97-3-52

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

(To Support and Endorse the Designation of the Savannah River Site as the Lead Facility for the Management and Disposition of Plutonium Within the Department of Energy.)

WHEREAS:

- 1. The handling and processing of excess weapons plutonium is of grave concern to the national security of the United States; and
- 2. plutonium disposition represents one of the most certain future missions of the Department of Energy for the future; and
- 3. The Department of Energy has decided to pursue a dual path for plutonium disposition and has named the Savannah River Site as a candidate site for both options; and
- 4. The Department of Energy in its Record of Decision recognizes the Savannah River Site as "a plutonium competent site with the most modern, state-of-the-art storage and processing facilities ... with the only remaining large-scale chemical separation and processing capability in the DOE complex"; and
- 5. Aiken County has steadfastly supported the Savannah River Site and Department of Energy during its long association.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

- 1. The Aiken County Council strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.
- 2. The Aiken County Council strongly encourages the Department of Energy to designate a facility for the permanent disposition for the nuclear waste materials to enhance the security and final disposition of these materials.

Adopted at the regular meeting of Aiken County Council on March 4, 1997.

WITNES:


Susan Tate, Council Clerk


Ronnie Young, Chairman

SIGNED:

IMPACT STATEMENT:

RES0220/AC/ERA

COUNCIL VOTE: Unanimous

SCD12

A RESOLUTION

Whereas, the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

Whereas, plutonium disposition represents one of the most certain future missions of the Department of Energy for the next twenty to thirty years; and

Whereas, the Department of Energy has decided to pursue a dual path for plutonium disposition and has named the Savannah River Site as a candidate site for both options; and

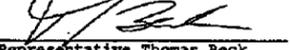
Whereas, the Department of Energy's Surplus Fissile Materials Disposition Program will result in the production of qualified disposal forms and the eventual removal of these materials from the State of South Carolina; and

Whereas, the Savannah River Site has produced approximately forty percent of all United States weapons grade plutonium over the last forty-five years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public, or the environment; and

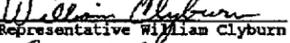
Whereas, the Department of Energy in its Record of Decision recognizes the Savannah River Site as "a plutonium competent site with the most modern, state-of-the-art storage and processing facilities...with the only remaining large-scale chemical separation and processing capability in the DOE complex"; and

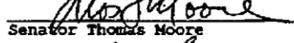
Whereas, the regional community in the Central Savannah River Area (CSRA) of South Carolina and Georgia strongly supports continued plutonium missions for the Department of Energy's Savannah River Site. Now, therefore,

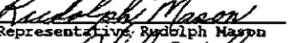
Be it resolved that the Aiken County, South Carolina Legislative Delegation strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.


 Representative Thomas Beck


 Representative Roland Smith


 Representative William Clyburn


 Senator Thomas Moore


 Representative Rudolph Mason


 Senator W. Greg Ryberg


 Representative Charles Sharpe

SCD82

SCD82-1

Alternatives

DOE acknowledges the Senators' and Representatives' support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



As Chief Executive Officer of Aiken Regional Medical Centers in Aiken, South Carolina I would like to extend my full support for the Pit Disassembly and Conversion at the Savannah River Site.

Obtaining the third element of the plutonium disposition mission is a winning proposition for both the Department of Energy and the CSRA (Central Savannah River Area). By choosing Savannah River Site DOE could save US Taxpayers approximately \$1.6 billion based on avoided costs of new structures and equipment. Savannah River Site has demonstrated competency in processing plutonium and have in place the necessary infrastructure for the processing along with comprehensive medical surveillance programs.

As a business person I see the importance of the Savannah River Site to the economic vitality of our area. Job stability along with the creation of new jobs is the backbone of any healthy community. Savannah River Site employees have proven over the years their commitment to safety and to the community at large. I have been a lifelong resident of the area and have no reservations in bringing the Pit Disassembly and Conversion to our region.


 RICHARD H. SATCHER
 8/13/98

SCD06-1

Alternatives

DOE acknowledges the commentator's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

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 at SRS 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.

RESOLUTION

WHEREAS the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

WHEREAS plutonium represents a significant energy source for the United States when used as fuel in nuclear reactors for the production of electricity; and

WHEREAS plutonium disposition represents one of the most certain future missions of the Department of Energy for the next 20 to 30 years; and

WHEREAS the Savannah River Site has produced approximately 40 percent of all U.S. weapons-grade plutonium over the past 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public or the environment; and

WHEREAS Allendale County of South Carolina strongly supports continued plutonium missions for the Department of Energy's Savannah River Site;

NOW BE IT RESOLVED that the Allendale County endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.

APPROVED this 12th day of February 1987, by the Allendale County Council.

J. W. Wall Jr.
Chairman

SCD86

SCD86-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.

AMERICAN NUCLEAR SOCIETY - SAVANNAH RIVER SECTION
STATEMENT REGARDING PLUTONIUM DISPOSITION
ENVIRONMENTAL IMPACT STATEMENT

My name is John Dewes and I am representing the Savannah River Section of the American Nuclear Society. Our local section consists of some 800 scientists and engineers in the Central Savannah River Area. On behalf of the Section, I would like to make a statement concerning Plutonium Disposition Environmental Impact Statement.

We strongly support the selection of the Savannah River Site for the pit disassembly and conversion mission. It is the only operating site in the DOE complex that has the supporting infrastructure in place to deal with this mission, including the safe management of wastes generated by the process. The site has been safely handling and processing plutonium for many years, and locating these missions at the same site will minimize future decommissioning costs. The biggest assets of the site, however, are the capable, experienced personnel who have proven that they can handle these materials in a safe manner.

We are encouraged by the progress made by the Department of Energy towards fulfilling the Plutonium Disposition Mission, and would like to see similar progress made on the ultimate disposition of wastes generated by these processes, as well as taking responsibility for commercial spent nuclear fuel.

Thank you for the opportunity to provide comment on this important issue.

SCD89

SCD89-1

Alternatives

DOE acknowledges the commentator's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

SCD89-2

Repositories

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. This SPD EIS, for the purposes of analysis, assumes that Yucca Mountain, Nevada, would be the final disposal site for all immobilized plutonium and MOX spent fuel. As directed by the U.S. Congress through the NWPA, as amended, Yucca Mountain is the only candidate site currently being characterized as a potential geologic repository for HLW and spent fuel. DOE has prepared a separate EIS, *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), which analyzes the environmental impacts from construction, operation and monitoring, related transportation, and eventual closure of a potential geologic repository.



United States
Department
of Energy

Comment Form

NAME (Optional) _____

ADDRESS _____

TELEPHONE (____) _____

E-MAIL: _____

Given the information contained within the Summary Document of the Draft EA, I cannot understand why DOE would entertain the possibility of selecting any site other than SRS for plutonium disposition alternatives. SRS is clearly the most cost effective, the most protective of the environment and human health and the most safe facility within the DOE complex for performing this work. PE assembly and conversion operations should be limited at SRS.

1

SCD69

SCD69-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



**United States
Department
of Energy**

Comment Form

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

Do not use this form to provide comments. They do not have the facilities necessary to receive and process comments. Use the DOE website.

1

SCD72

SCD72-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



United States
Department
of Energy

Comment Form

NAME (Optional) RICHARD BALSER
ADDRESS: 704-23F, Aiken, SC
TELEPHONE (803) 952-4254
E-MAIL: RICHARD.BALSER@SES.GOV

SUMMARY: PANTEX DOES NOT APPEAR TO HAVE AN ADEQUATE INFRASTRUCTURE FOR CONTAMINATION CONTROL TO PREVENT PIT DISASTROUSLY AND CORROSION

I AM CURRENTLY INVOLVED IN ACCORDANCE REPORTING AT SES. I REVIEWED CURRENT REPORTING SYSTEMS FOR THE PANTEX PLANT. THERE WAS A CONSIDERABLE ABSENCE OF REPORTS OF CONTAMINATION CASES AT SITES. OUR PREVIOUS REPORT IN 1993 DID REPORT A CONTAMINATION CASE. ON REVIEWING THE REPORT, I FOUND THAT THEY (PANTEX) USE DIVERSE CONTRACTS FOR AIRBORNE CONTAMINATION CONTROL. AN ADDITIONAL BARBER TO IDENTIFY RADIOLOGICAL CONTROL PROCEDURES, CONTAMINATED LAUNDRY PROCESSES, EXPERIMENTAL BIOLOGICAL CONTROL PROCEDURES, AND ASSOCIATED INTERFERENCE WOULD BE NECESSARY AT PANTEX. THE SHERMAN SITE HAS THE EXPERIENCE AND INFRASTRUCTURE TO PROBABLY CONTROL CONTAMINATION THAT WILL BE AN INTERNAL PART OF THE PLANT. PIT DISASTROUSLY AND CORROSION. ALTHOUGH NOT IMPROVE, IT WOULD BE DIFFICULT TO REBUILD BIRTH PINKES FACILITIES AND REPORT TO ENSURE PROTECTION TO THE WORKERS AND ENVIRONMENT COMPAREABLE TO WHAT AEROSOL CASES AT SES.

1

SCD90

SCD90-1

Alternatives

DOE acknowledges the commentor's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

All of the DOE candidate sites, including Pantex, are considered suitable from a safety and conduct of operations standpoint and all sites would comply with applicable Federal, State, and local laws and regulations governing radiological and hazardous chemical releases. Therefore, Pantex may need to modify or develop appropriate procedures and plans to ensure protection of the workers, public, and environment should a proposed surplus plutonium disposition facility be sited there since the site's current operations do not include plutonium processing. 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.

THANK YOU, MR. MODERATOR

MY NAME IS JASPER VARN AND I AM THE CHAIRMAN OF THE
BAMBERG COUNTY COUNCIL AND I ALSO SERVE AS VICE-CHAIRMAN
OF THE TRI-COUNTY ALLIANCE REPRESENTING THE THREE COUNTY
REGION OF ALLENDALE, BARNWELL, AND BAMBERG.

MY PURPOSE TODAY, IS TO SPEAK ON BEHALF OF THE 1500 PEOPLE
THAT LIVE IN OUR THREE COUNTY AREA AND WORK AT THE
SAVANNAH RIVER SITE. AND TO ALSO SPEAK ON BEHALF OF THE
MORE THAN 500 PEOPLE WHO HAVE LOST THEIR JOBS FROM
DOWNSIZING AND CHANGING MISSIONS IN WHICH THE SITE HAS
UNDERGONE.

THESE PEOPLE ARE SOME OF THE MOST DEDICATED AND LOYAL
PEOPLE I HAVE EVER KNOWN. THEY HAVE SERVED THEIR COUNTRY
DURING THE COLD WAR AND PLAYED A TREMENDOUSLY IMPORTANT
ROLE IN GETTING TO THE POINT WE ARE TODAY.
IN AN EVER-CHANGING ATMOSPHERE, THE SITE AND ITS PEOPLE

SCD40

SCD40-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

HAVE ADJUSTED AND PERFORMED.

THE PROSPECT OF NEW MISSIONS COMING TO THE SITE IS A WELCOME CHANGE FROM HAVING JOBS DRY UP. THE NEW PLUTONIUM OPPORTUNITIES MEAN A BRIGHTER FUTURE FOR THE SRS EMPLOYEES WHO HAVE DONE THIS WORK FOR SO MANY YEARS.

I BELIEVE THE DEPARTMENT OF ENERGY AND THE ADMINISTRATION WILL REWARD THIS SITE AND THESE PEOPLE BY ASSIGNING THIS MOST IMPORTANT MISSION TO SOUTH CAROLINA.

THE SAVANNAH RIVER SITE HAS THE INFRASTRUCTURE, IT HAS THE SUPPORT OF THE COMMUNITY, IT HAS THE EXPERIENCE, AND MOST IMPORTANTLY, IT HAS THE PEOPLE.

THANK YOU.

1

SCD40

THANK YOU MR. MODERATOR

MY NAME IS DENNIS HUTTO, AND I AM THE PRESIDENT OF THE
BARNWELL COUNTY CHAMBER OF COMMERCE.

I, TOO WOULD LIKE TO THANK YOU FOR THIS OPPORTUNITY TO
SPEAK ON BEHALF OF THE SAVANNAH RIVER SITE AND THE FINE
PEOPLE WHO WORK THERE.

AS HAS BEEN POINTED OUT, THERE IS NO QUESTION AS TO WHERE
THE ENTIRE PLUTONIUM DISPOSITION MISSION SHOULD BE AND WHO
SHOULD MANAGE IT.

THE QUESTION SEEMS TO BE "WILL THE SECRETARY OF ENERGY
MAKE THE DECISION ON PIT CONVERSION LOCATION BASED ON
TECHNICAL CRITERIA OR POLITICAL EXPEDIENCY?"

WE ALL KNOW, TEXAS HAS A BIGGER CONGRESSIONAL DELEGATION,
WE ALL KNOW, TEXAS HAS MORE ELECTORAL VOTES, BUT WE ALSO
KNOW, TEXAS DOES NOT HAVE THE INFRASTRUCTURE OR
EXPERTISE THAT SOUTH CAROLINA HAS IN HANDLING, STORING, AND
PROCESSING PLUTONIUM.

SCD38

SCD38-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

LAST YEAR, YOU SAID THAT THE SAVANNAH RIVER SITE WAS "A PLUTONIUM-COMPETENT SITE WITH THE MOST MODERN, STATE-OF-THE-ART STORAGE AND PROCESSING FACILITIES" IN THE DEPARTMENT'S COMPLEX. IF THAT WAS TRUE THEN,, THEN IT IS TRUE NOW.

BARNWELL COUNTY, ALLENDALE COUNTY, BAMBERG COUNTY, AND THE REST OF THE REGION HAVE SUPPORTED THE SITE FOREVER.

AND YOU KNOW THE ECONOMIC IMPACT THE SITE HAS ON OUR REGION. AND YES, YOU KNOW WE WANT THE MISSION BECAUSE IT MEANS MORE JOBS FOR OUR AREA. BUT IT IS MUCH BIGGER THAN THAT.....THIS IS A DECISION THAT SHOULD BE BASED ON

EXPERIENCE, ON COST TO TAXPAYERS, ON EFFICIENCY, ON SITE CAPABILITIES, AND ON WHO CAN DO THE JOB SAFELY.

IF THE SECRETARY WILL MAKE THE DECISIONS CONCERNING PLUTONIUM BASED ON THESE CRITERIA, AND LEAVE POLITICS TO THE POLITICIANS, THEN THE SRS COMMUNITIES AND THE NATION ARE BETTER OFF.

THANK YOU!!

1

SCD38

RESOLUTION

WHEREAS the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

WHEREAS plutonium represents a significant energy source for the United States when used as fuel in nuclear reactors for the production of electricity; and

WHEREAS plutonium disposition represents one of the most certain future missions of the Department of Energy for the next 20 to 30 years; and

WHEREAS the Savannah River Site has produced approximately 40 percent of all U.S. weapons-grade plutonium over the past 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public or the environment; and

WHEREAS Barnwell County of South Carolina strongly supports continued plutonium missions for the Department of Energy's Savannah River Site;

NOW BE IT RESOLVED that the Barnwell County endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.

APPROVED this 12th day of February 1997, by the Barnwell County Council.

Harold Buchman
Chairman

SCD85

SCD85-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

(1)

THANK YOU MR. MODERATOR, DOE, ~~Elected~~ ^{Appointed} officials
^{well wishers}

LET ME FIRST THANK YOU FOR THE OPPORTUNITY TO SPEAK ON THIS
ISSUE AND EXPRESS THE VIEWS OF THE BARNWELL COUNTY
COUNCIL.

IT SEEMS WE COME TO THESE MEETINGS SEVERAL TIMES A YEAR TO
ASK THE DEPARTMENT OF ENERGY TO DO SOMETHING, ~~AND HERE~~
~~WE ARE AGAIN!!!~~

THIS TIME WE ARE TALKING ABOUT LOCATING ALL THE PLUTONIUM
DISPOSITION MISSIONS WITHIN THE DOE COMPLEX.

THE DEPARTMENT HAS ALREADY DETERMINED THE SAVANNAH
RIVER SITE WILL PERFORM THE VITRIFICATION COMPONENT. THE
SECRETARY HAS ALREADY ANNOUNCED THAT IF A MOX FUEL
FACILITY IS BUILT, IT WILL BE BUILT AT SAVANNAH RIVER.

THE ONLY QUESTION LEFT, IS WHERE WILL THE PIT DISASSEMBLY
AND CONVERSION BE DONE?

THE LOCATION CHOICE IS BETWEEN TEXAS AND SOUTH CAROLINA.
^{IT APPEARS}
AND NOW THE DECISION FOR THIS COMPONENT HAS BROKEN

SCD39

SCD39-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.

(2)

DOWN TO A POLITICAL ONE.

WHO HAS THE MOST RESOURCES TO PERSUADE CONGRESS? WHO

HAS THE MOST INFLUENCE WITH THE DEPARTMENT OF ENERGY?

~~FOR ONCE I WOULD LIKE TO SEE THE DEPARTMENT OF ENERGY~~

~~SO IF~~ MAKE A DECISION BASED ON TECHNICAL MERIT, AND IN THE
BEST INTEREST OF THE NATION AND ITS TAXPAYERS. *SRP*

AND IF THAT SHOULD HAPPEN, YOU KNOW THE SAVANNAH RIVER
SITE IS THE ONLY CHOICE FOR ALL PLUTONIUM RELATED MISSIONS,
AS WELL AS, MANY OTHERS.

THERE IS NO SAFER, MORE EFFICIENT, AND KNOWLEDABLE SITE IN
THE NATION. THERE IS NO ^{Other} SITE THAT ENJOYS THE COMMUNITY
SUPPORT THAT SRS HAS!

~~IF THIS DECISION WAS PURELY A LOGICAL DECISION, WE WOULDN'T
HAVE HAD TO BE HERE TODAY.~~

~~ALTHOUGH, I ENJOY SEEING OUR GOOD FRIENDS FROM Aiken AND
AUGUSTA, I CERTAINLY COULD HAVE FOUND SOMETHING ELSE
TO DO BESIDES RIDE 60 MILES TO BE HERE.~~

SCD39

3-539

(3)

AFTER TODAY THE DECISION IS IN YOUR LAP.
YOU'VE HEARD FROM THE COMMUNITIES, YOU KNOW THE SITE'S
CAPABILITIES.
LET'S HAVE AN ANNOUNCEMENT!

1

Again THANK YOU for this opportunity

NAME CLYDE T. REED (Barnwell County Council Chairman)
ADDRESS P.O. BOX 1238
BARNWELL, S.C. 29812
PHONE 803-541-0023

SCD39

BARNWELL SCHOOL DISTRICT 45
JAMES E. BENSON ET AL.
PAGE 1 OF 2

BARNWELL SCHOOL DISTRICT 45
James E. Benson
Superintendent

2008 Hagood Avenue
Barnwell, S.C. 29812
(803) 541-1300 • FAX 541-1348
E-Mail: Barnwell 45@barnwellsc.com

September 14, 1998

Ms. Laura Holgate
Director, Office of Fissile Materials Disposition
U. S. Department of Energy
1000 Independence Avenue
Washington, DC 20585

Dear Ms. Holgate:

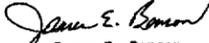
The Barnwell School District 45 Board of Trustees unanimously adopted a Resolution on August 27, 1998, supporting the location of the pit assembly and conversion mission at Savannah River Site. We have sent you the Resolution.

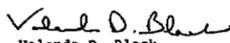
During the 1997-98 school year, approximately 20% of our students had a parent or guardian employed at Savannah River Site. These parents and guardians are active in numerous efforts which benefit our students. They are members of the Scarlet Knights Band Booster Club and the Barnwell Warhorse Club, organizations which raise thousands of dollars annually for the district's band and athletic programs. Many members of the Barnwell Elementary School PTO are employees at SRS.

In addition to being dedicated supporters of their local schools in Barnwell District 45, the SRS parents are hard working, loyal employees. Over the years, they have continuously met safety requirements and demands at the Savannah River facility. Today, they stand ready to meet any challenges which come with the selection of SRS as the location of any new missions, including the vital pit disassembly and conversion mission.

Finally, as stated in the enclosed Resolution, the Barnwell School District 45 Board of Trustees encourages the Department of Energy to select SRS as the facility for the new missions. Hundreds of Barnwell School District 45 graduates have been outstanding employees at SRS for more than four decades. Hopefully, the Department of Energy's decision will assure that students presently being educated in Barnwell School District 45 will be given an opportunity to be a part of the highly skilled work force needed for new missions at SRS. Barnwell School District 45 is working hard to help prepare the next generation of outstanding SRS employees.

Sincerely,


James E. Benson,
Superintendent


Valenda D. Black,
SRS Liaison

Encl.

FULLY ACCREDITED BY SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

MD287

MD287-1

Alternatives

DOE acknowledges the commentors' support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

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 at SRS 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.

3-541

Comment Documents and Responses—South Carolina

RESOLUTION
Board of Trustees
Barnwell School District 45
August 27, 1998

WHEREAS, the Savannah River Site is being considered by the Department of Energy as the location for the vital pit disassembly and conversion mission, and

WHEREAS, the Department of Energy has previously expressed confidence in Savannah River Site by assigning the MOX and immobilization missions to the Site; and

WHEREAS, highly skilled work force and experienced employees are already in place at Savannah River Site and trained to perform duties and responsibilities necessary for the pit disassembly and conversion mission; and

WHEREAS, selection of Savannah River Site for all parts of the plutonium disposition mission, including pit disassembly and conversion, can save taxpayers at least 1.6 billion dollars because structures and equipment required for the mission already exist at Savannah River Site; and

WHEREAS, Savannah River Site employees have consistently met strict safety requirements for over four decades, thus establishing a stellar record of safe operations at the Site, and

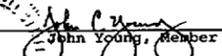
WHEREAS, location of the pit disassembly and conversion mission at Savannah River Site would create hundreds of employment opportunities for local citizens, including Barnwell High School graduates,

BE IT THEREFORE RESOLVED that we, the Trustees of Barnwell School District 45, do hereby totally and wholeheartedly support the location of the pit disassembly and conversion mission at Savannah River Site.


Donald Kitt, Board Chair


Reed Swann, Member


Sue Black, Vice-Chair


John Young, Member


James McCormack, Clerk


James E. Benson, Superintendent



MD287



United States
Department
of Energy

Comment Form

NAME: (Optional) Charles Burt
ADDRESS: 2047 MAPLEWOOD DR N. AUGUSTA SC 29841
TELEPHONE: (803) 2791726
E-MAIL: Charles.Burt@SPS.GOV

SPS HAS THE INFRASTRUCTURE COMMUNITY & LEGISLATIVE
SUPPORT FOR THE ENTIRE PLUTONIUM STABILIZATION MISSION.
SENDING ANY PIECE OF THIS WORK TO PANTER OR ANY OTHER
SITE IS A MISTAKE IN COST-EFFECTIVENESS AND EFFICIENCY OF
OPERATIONS.

1

SCD26

SCD26-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



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August 11, 1998

Ms. Laura Holgate
Director, Office of Fissile Materials Disposition
U.S. Department of Energy
1000 Independence Ave
Washington, DC 20585

Dear Ms. Holgate:

Citizens for Nuclear Technology Awareness (CNTA) is an organization dedicated to creating greater public awareness of nuclear technology issues and supporting the vital activities of the Savannah River Site (SRS). Our membership consists of current and former SRS employees as well as interested members of the community at large.

Attached to this letter are questions raised by our general membership about inadequacies of the Draft Surplus Plutonium Disposition EIS. While they deal with a wide range of issues, our primary concern lies with the consideration of locating a plutonium processing capability at Pantex where no such mission exists today.

Plutonium processing is a highly specialized technology with unique skill, safety, material accountability and waste management requirements—none of which are in place at Pantex. In addition, if located at Pantex, such processing places extensive clean-up, decontamination and decommissioning demands on a site where those expensive obligations don't currently exist. These issues are not adequately addressed in your current draft which appears to run counter to the conclusions reached in your similar 1996 EIS for Stockpile Stewardship & Management which states:

"Plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium into sites without current plutonium capabilities."

Unlike Pantex, SRS is a site with existing infrastructure and worker skill base to meet those obligations efficiently and effectively. The men and women of SRS have safely met the requirements of this complex processing arena for more than four decades.

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SCD24

SCD24-1

Alternatives

DOE acknowledges the commentor's opposition to siting the proposed surplus plutonium disposition facilities 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

SCD24-2

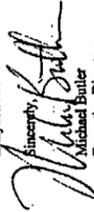
Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

CITIZENS FOR NUCLEAR TECHNOLOGY AWARENESS
MICHAEL BUTLER
PAGE 2 OF 14

With its unrivaled history of safe operations, environmental stewardship, technological accomplishment and community support, SRS deserves your fair consideration of the issues and questions CNTA has submitted. If that is done, we are certain that SRS will be your site of choice for all three important missions analyzed in this EIS.

2

Sincerely,

Michael Butler
Executive Director

SCD24

Citizens for Nuclear Technology Awareness
 Additional Questions the Surplus Plutonium Disposition EIS

Plutonium Missions/Plutonium Sites/Plutonium Infrastructure

1. In 1996 DOE decided that Pantex was not suitable for a plutonium mission because "plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current capabilities." (Stockpile Stewardship EIS). What has changed? Why is DOE considering abandoning this policy? 3
2. DOE explains that its preference for immobilization at SRS "complements existing missions and takes advantage of existing infrastructure and staff expertise." (Page S-9). In the June 23, 1998 MOX announcement, DOE said its preference for MOX at SRS was because this mission "complements existing missions and takes advantage of existing infrastructure and staff expertise," and that Pantex "does not offer a comparable infrastructure including waste management." What is different about the plutonium processing required for the pit disassembly and conversion mission that makes Pantex equally preferred? What existing missions at Pantex are complementary? What existing infrastructure and staff expertise can be applied to pit disassembly and conversion? The Cost Report identifies significant inadequacies in the Pantex infrastructure. 4
3. DOE is certainly very responsive to some of the public. "During the scoping process, the comment was made that Pantex should be considered for the pit conversion facility," and three options were added. The EIS claims such comments were screened against three criteria, one of which was infrastructure cost. Please explain how Pantex, with no plutonium infrastructure, could pass this screen. Please provide evidence of a "public" demand to make Pantex a new plutonium processing site. 5

Pit Storage, Transportation, and Safety

4. In the 1997 PEIS Record of Decision, DOE said that it would store surplus pits awaiting disposition in upgraded facilities at Zone 12 at Pantex by 2004. What is the status of that program? Will it be completed on schedule? Since all the surplus pits will have to be packaged and shipped from their current temporary storage in Zone 4 to these upgraded facilities in Zone 12, then moved back again to a pit disassembly facility located in Zone 4, wouldn't there be less cost and exposure to move them once directly to SRS? 6

SCD24

SCD24-3

DOE Policy

The *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management (SSM PEIS)* (DOE/EIS-0236, September 1996) states that the pit fabrication mission would not be introduced into a site that does not have an existing plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current plutonium capabilities. The SSM PEIS states further that an important element of the site selection strategy is to maximize the use of existing infrastructure and facilities as the nuclear weapons complex becomes smaller and more efficient in the 21st century; thus, no new facilities were to be built to accommodate stockpile management missions. Accordingly, DOE considered as reasonable only those sites with existing infrastructure capable of supporting a pit fabrication mission. Although Pantex has the infrastructure to carry out its current weapons assembly and disassembly mission and nonintrusive pit reuse program, it was not considered a viable alternative for the pit fabrication mission because it did not possess sufficient capability and infrastructure to meet the SSM PEIS siting assumption stated above. Among the operations that were considered in developing siting alternatives for pit fabrication in the SSM PEIS were plutonium foundry and mechanical processes, including casting, shaping, machining, and bonding; a plutonium-processing capability for extracting and purifying plutonium to a reusable form either from pits or residues; and assembly operations involving seal welding and postassembly processing.

When comparing the site selection strategy for pit disassembly and conversion with that used for the pit fabrication mission, the siting criteria in the SSM PEIS have little or no bearing on siting criteria used in this SPD EIS. Pit disassembly and conversion do not require the foundry and mechanical processes discussed in the SSM PEIS and can be accomplished in a stand-alone facility. Also, the SSM PEIS siting assumptions include a requirement to use existing facilities, whereas, the pit conversion facility would be a new structure no matter where it is located.

SCD24-4

Alternatives

The initial preference for Pantex and SRS as sites for the pit conversion facility was based on a determination by DOE that the differences in environmental impacts were modest, and thus did not warrant the preference of one site over the other. Existing infrastructure that supported placement of the pit conversion facility at Pantex included security, staff expertise, and the presence of the pits that need to be dismantled. Costs for all required infrastructure were estimated, and even with the additional waste management infrastructure support needed at Pantex, the cost differences were not considered significant.

As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

SCD24-5

Alternatives

Pantex was identified as a candidate site for both the pit conversion and MOX facilities in the NOI. The alternatives that were added after the scoping process to include Pantex as a candidate site for pit conversion were associated with the immobilization-only options; Pantex had already been identified as a candidate site for the pit conversion facility for a number of the hybrid alternatives. As discussed in Section 2.3.1, these options were added after DOE confirmed that they met all the screening criteria.

SCD24-6

Storage and Disposition PEIS and ROD

DOE acknowledges the commentor's concern regarding the 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.

Worker exposure estimates attributable to the decisions to repackage 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 determined; e.g., 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*.

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| <p>5. Locating pit disassembly and conversion at Pantex could be viewed from a safety perspective in the following way:</p> <ul style="list-style-type: none"> • DOE is proposing to convert sealed plutonium metallic components into a large quantity of dispersible plutonium oxide, then store it directly in the flight path of the Amarillo airport in a facility near bunkers of high explosives and nuclear warheads. • Then DOE must ship a dispersible form of plutonium in quantities far larger than has ever been shipped before. <p>Please explain the logic of this proposal from a safety perspective.</p> | 7 |
| <p>6. The EIS transportation data show a significant transportation safety advantage and essentially no more total shipping by co-locating all three disposition programs at SRS. Since the only explanation given for adding Pantex to the program as a processing site was because the pits were there and that might mean a transportation advantage for this option, isn't there now reason to eliminate Pantex, especially since it has no history of plutonium work?</p> | 8 |
| <p>7. DOE's Environmental Management Division has stated that they expect to save over a billion dollars by accelerating shipment of non-pit plutonium from Hanford and Rocky Flats to SRS for disposition. If it is cost effective for EM to expedite the movement of that plutonium, then isn't it cost effective for DOE to accelerate the shipments of pits from Pantex? Particularly considering the major upgrades required at Pantex for safe storage if the pits are not promptly moved.</p> | 9 |
| <p><u>EIS Inadequacies</u></p> | |
| <p>8. Appendix N. Plutonium Polishing, shows that an aqueous process can purify plutonium and produce plutonium oxide with very little waste. Since dissolving plutonium metal is easier than dissolving plutonium oxide, it stands to reason that direct dissolving of pits is a reasonable alternative. Where is the alternative of dissolving pits compared and assessed versus the proposed dry process of pit conversion?</p> | 10 |
| <p>9. The Nuclear Weapons and Material Monitor reported that there was an Appendix B which evaluated an aqueous alternative for pit conversion and concluded that it could be done faster and used proven technology. Where is this alternative in the draft?</p> | 11 |
| <p>10. Please provide supporting data for the claim that the proposed dry process for pit conversion produces fewer wastes. This is truly puzzling. There is no data in the EIS to support this claim.</p> | 12 |
| <p>11. A recent amendment to the MOX RFP says DOE will pay the delay cost associated with failure to deliver acceptable PuO₂ on schedule. Was this requested by the potential vendors because of DOE's plan to use ARIES - produced oxide, and their concern as to its acceptability?</p> | 13 |

SCD24

SCD24-7

Human Health Risk

DOE acknowledges the commentor's concern about the safety of locating and operating a pit conversion facility at Pantex.

In response to public concerns, a number of actions (see Appendix K.1.5.1) have been taken to reduce the risk of an aircraft crash at Pantex. The frequency of a crash into a pit conversion facility vault containing plutonium powder (plutonium dioxide) is less than 1 in 10 million per year. According to conservative calculations (see Table K-12), this "beyond-extremely-unlikely" accident (estimated frequency: lower than 1 in 1 million per year) would induce 4.5 LCFs in the population within 80 km (50 mi) of the site.

The impacts of explosives and the associated release of plutonium powder into the environment have also been evaluated (Appendix K.1.5.2.1). An explosion would be "unlikely" (estimated frequency: 1 in 10,000 to 1 in 100 per year). Conservative calculations (see Table K-12) indicate that this accident would induce only 0.00011 LCF in the population within 80 km (50 mi) of the site. The inadvertent detonation of a nuclear warhead is not considered credible.

Impacts associated with transporting plutonium dioxide from Pantex to offsite facilities are addressed in this SPD EIS; an estimate of the maximum potential impacts of such a shipment is included in Appendix L.6.3. According to conservative calculations, a transportation accident in an urban area would produce 27 LCFs within a radius of 80 km (50 mi) of the accident location. However, given the extremely low frequency of the accident (much lower than 1 in 10 million per year), the actual risk of a fatal cancer is extremely low. A transportation accident in a rural area, the scenario discussed in Section 4.6.2.6, has a frequency of 1 in 10 million per year and a predicted impact of less than 0.1 LCF. The net result is an extremely low risk of a fatal cancer among the population within 80 km (50 mi) of the accident.

In summary, conservative evaluations indicate no significant safety concerns to the public from locating the pit conversion facility at Pantex.

Comment Documents and Responses—South Carolina

SCD24-8**Transportation**

The selection of sites for potential surplus plutonium disposition facilities was based on a number of factors. The location of the surplus pits at Pantex was not the only reason for making it a reasonable alternative for siting the proposed surplus plutonium disposition facilities. 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 shows the transportation risks for all alternatives. Analyses of transportation risks are just one of the factors considered in the decisionmaking regarding facility siting.

SCD24-9**Storage and Disposition PEIS and ROD**

The potential cost saving that could result from the early movement of nonpit surplus plutonium from RFETS and Hanford is based on the termination of storage operations and the required security at those sites. The same situation does not apply to Pantex, which will continue its storage mission and associated security. Further, major upgrades of storage facilities at Pantex are not required, but DOE is considering some upgrades (e.g., air conditioning, catwalks, standby power) to address plutonium storage requirements. Although SRS is preferred for the proposed surplus plutonium disposition facilities, a decision has not been made. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

SCD24-10**Plutonium Polishing and Aqueous Processing**

DOE analyzed the full range of reasonable alternatives for the disassembly and conversion of the plutonium in pits into a form suitable for disposition using either immobilization or MOX fuel. There are two basic technologies available for the conversion of pit plutonium into plutonium dioxide: wet (aqueous) and dry processing. DOE determined that aqueous processing, a proven technology, was not a reasonable alternative for pit conversion because current aqueous processes using existing facilities would produce significant amounts of waste, and aqueous processing would complicate international safeguard regimes. Dry processing was analyzed in the *Storage and Disposition PEIS* and this SPD EIS. DOE is currently demonstrating the

dry plutonium conversion process as an integrated system at LANL. This activity is described in the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998), which is available on the MD Web site at <http://www.doe-md.com>. There is no alternative in the SPD EIS that evaluates dissolving pits.

DOE is not including the plutonium-polishing process (a small-scale aqueous process) as part of the pit conversion facility; that process would be part of the MOX facility. DOE would use only dry processes in the pit conversion facility. For this reason, the thermal process for removing gallium may not be needed in the pit conversion facility (see revised Section 2.4.1.2). Plutonium dioxide is the starting form for the disposition of surplus plutonium for either the immobilization or MOX fuel approach.

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 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.

SCD24-11 Plutonium Polishing and Aqueous Processing

This comment is addressed in response SCD24-10.

SCD24-12 Waste Management

The *Storage and Disposition PEIS* evaluated an aqueous plutonium conversion process similar to that used in the SRS canyons. A plutonium conversion process is needed to convert plutonium metal to an oxide for use in either the immobilization or MOX facility. Compared with the dry conversion processes evaluated in this SPD EIS for use in the pit conversion and immobilization facilities, the aqueous conversion process evaluated in the PEIS would generate significantly more radioactive waste as shown in the following table.

Type of Waste (m ³ /yr)	PEIS Plutonium Conversion	SPD EIS	
		Pit Conversion	Immobilization
LLW	1,799	60	81
Mixed LLW	191	1	1
TRU	472	18	95

SCD24-13**MOXRFP**

The failure or delay of DOE to deliver plutonium dioxide to the contractor according to schedule would require the contractor to supply its mission reactors with replacement LEU fuel at increased costs. This amendment to the RFP is for the protection of the contractor, regardless of the source of the delay in providing the plutonium dioxide.

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| <p>12. If you used an aqueous process to make pure plutonium oxide, there would be a big savings in the cost and environmental impact of both the MOX and immobilization plants. The plants could be smaller, less automated, and much less R&D would be required. Did your decision to only consider a dry process consider the downstream impact of your conversion process decision? Please provide the details of your evaluation of the differences in the downstream facilities.</p> | 14 |
| <p>13. A pit disassembly and conversion plant at Pantex will have to high-fire the plutonium oxide to comply with DOE Standard 3013 for shipment and storage. Is the high-fired oxide usable for either MOX or immobilization without extensive pretreatment? If aqueous polishing is required, the Oak Ridge report says the feed cannot be high-fired. How will you polish plutonium oxide treated to the 3013 Standard?</p> | 15 |
| <p>14. There is no analysis of the savings possible by using existing facilities at SRS for converting plutonium to the oxide form for MOX or immobilization. Since the SRS facilities are already operating and have most of the capabilities needed for this activity, wouldn't there be a big savings of time, investment, and future cleanup?</p> | 16 |
| <p>Programmatic Questions and Issues</p> | |
| <p>15. Appendix N, Plutonium Polishing, is presented as a "contingency." What is the legal status of a "contingency" or an Appendix? Generally a NEPA issue has to be presented as part of the proposed action, available for public review and comment, to be a legal basis for a decision.</p> | 17 |
| <p>16. The MOX Request for Proposal (RFP) has been revised four times since its original issue a little more than two months ago in May. MOX feed is now described as being produced by a "dry process" rather than the original hydride-dehydride process. What is the significance of this change? What process is described in the EIS? Will the EIS be revised to incorporate the evolving process proposed for MOX?</p> | 18 |
| <p>17. The ten year MOX disposition program is inconsistent with schedules, capacities and reactor cycles. The elapsed time is more likely the 20-25 years described by many. The EIS uses a ten year basis for estimating exposure. This represents a best—not worst—boundary case. Do you plan to revise the EIS to reflect more realistic schedules?</p> | 19 |
| <p>Waste and Waste Management</p> | |
| <p>18. How much waste would be produced by using the existing facilities at SRS to convert plutonium to plutonium oxide? Would this amount significantly impact the waste DOE already has to handle at SRS? If all of the 50 metric tons of surplus plutonium were aqueously processed at SRS, fewer than 20 additional glass logs would be produced by DWPF out of an approximate total of 5200 and would represent less than one month out of 25 years of operation of DWPF.</p> | 20 |

SCD24

SCD24-14

Plutonium Polishing and Aqueous Processing

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. This new report includes the cost associated with plutonium polishing in the estimates for the MOX facility.

The remainder of this comment is addressed in response SCD24-10.

SCD24-15

Plutonium Polishing and Aqueous Processing

It is not certain that plutonium dioxide would have to be high-temperature fired prior to shipment and storage to meet the DOE 3013 standard, *Criteria for Preparing and Packaging Plutonium Metals and Oxides for Long-Term Storage*. High-temperature-fired dioxide can be used for either the immobilization or MOX approach; it just does not dissolve as readily as material that has not been subjected to the higher temperatures. The report to which the commentator may be referring, *Final Data Report Response to the Draft Surplus Plutonium Disposition Environmental Impact Statement Data Call for Generic Site Add-On Facility for Plutonium Polishing* (ORNL/TM-13669, June 1998) indicates that it is better not to subject the plutonium dioxide to the higher-temperature processing, but does not indicate that plutonium dioxide processed at higher temperatures is unacceptable as feed for either immobilization or MOX fuel fabrication.

The remainder of this comment is addressed in response SCD24-10.

SCD24-16**Cost**

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.

SCD24-17**General SPD EIS and NEPA Process**

CEQ regulations for NEPA in 40 CFR 1502.18 state that an appendix shall: (a) consist of material prepared in connection with an EIS (as distinct from material which is not so prepared and which is incorporated by reference); (b) normally consist of material which substantiates any analysis fundamental to the EIS; (c) normally be analytic and relevant to the decision to be made; and (d) be circulated with the EIS or be readily available on request. In accordance with CEQ regulations, lengthy technical discussions of modeling methodology, baseline studies, or other work are best reserved for an appendix. In other words, if technically trained individuals are the only ones likely to understand a particular discussion, then that discussion should be included as an appendix, and a plain language summary of the analysis and conclusions of that technical discussion should be included in the text of the EIS.

The remainder of this comment is addressed in response SCD24-10.

SCD24-18**Pit Disassembly and Conversion**

The HYDOX (dry) process described for the pit conversion facility in Section 2.4.1.2 is a process for converting plutonium metal with certain impurities to a plutonium dioxide with a minimum of impurities. In the HYDOX process, the pit hemishells (i.e., nonpit plutonium metal) would be placed into the HYDOX module, where the metal would be exposed to and react with hydrogen, then nitrogen, and finally oxygen at controlled temperatures and pressures to produce plutonium dioxide. This is one variation of the basic hydride-dehydride process; another would produce a metal rather than an

oxide. The process described in this SPD EIS is not only representative of the proposed process, but is bounding for potential impacts, including accidents. However, a pit disassembly and conversion demonstration aimed at optimizing process operations for the pit conversion facility is under way at LANL. Should evidence from that demonstration or other research invalidate the analyses reflected in this EIS, additional NEPA documentation would be prepared.

SCD24-19

MOX Approach

DOE's MOX RFP specified a timetable including first insertion of production, not test, fuel no later than the end of calendar year 2007, and a date of last insertion no later than 2019. This timetable was acceptable to DCS, the team that was selected for this effort.

The analyses in this SPD EIS reflect a 10-year schedule of operations for the proposed surplus plutonium disposition facilities. Section 4.30.2 includes a discussion of incremental impacts of variations in that schedule. As explained in that section, certain impacts (e.g., exposure) would occur only or primarily during processing, and the total impacts would not change even if the processing schedule were extended or shortened. For example, if the operating period of the MOX facility were extended by 1 year, the total dose and LCFs for the worker and the public would remain essentially unchanged, though the annual dose would be expected to decrease. If the facility were not operating, or operating at a lower throughput, the dose rate would be lower. Then the only contributors would be small amounts of internal equipment contamination and material in highly shielded storage, and presumably fewer workers would be at the facility. Total impacts from these internal sources, however, would depend on the period of operations; lengthening operations for 1 year would mean continued impacts at the levels described in Chapter 4 of Volume I for 1 year longer.

To support the MOX approach, the proposed reactors would use MOX fuel for up to 3 years after it is placed in the reactor core. Therefore, the reactors could operate with MOX fuel for 3 to 5 years after the MOX facility has ceased operating because that facility includes space for storage of up to 2 years' worth of fresh fuel assemblies.

SCD24-20**Waste Management**

Use of F-Canyon at SRS to convert plutonium for use in either the immobilization or MOX facility would require reconfiguring the canyon and keeping it in operation for another 10 years or more. DOE has already made a commitment to the public, the U.S. Congress, and DNFSB to shut the canyon down. DOE presented the SRS Chemical Separation Facilities Multi-Year Plan to Congress in 1997. This plan provides the DOE strategy for the expeditious stabilization of SRS nuclear materials in accordance with DNFSB Recommendation 94-1, and provides for the early stabilization of certain limited quantities of plutonium materials from RFETS. Once this stabilization effort was complete, the canyon would be shut down and D&D activities would begin. In addition, this process would make the surplus material considerably more weapons-usable, and as such would not fulfill the purpose and need of the proposed action.

The remainder of this comment is addressed in response SCD24-12.

19. DOE plans to entomb six million cubic feet of TRU waste at WIPP. The pit disassembly and conversion facility will produce less than .1% of this quantity regardless of whether a dry or aqueous process is used. Therefore whether one pit conversion process produces slightly more or less TRU waste than another is irrelevant. The appropriate criteria are: <ul style="list-style-type: none"> • Cost, schedule, technical confidence • Impacts on downstream processing • Potential for using existing facilities Where is the comparison of the two process options against these criteria?	21
<u>EIS Data Inconsistencies</u>	
20. Why is the radiation exposure to construction workers at Pantex reported as zero when section 3.4.4.1.2. reports that annual doses of 100 mrem above background are measured in zone 4, the site of the proposed facilities?	22
21. Why is the annual TRU waste volume for pit disassembly and conversion, a very large facility handling 33 metric tons of plutonium oxide, much less than the TRU waste from the much smaller MOX and immobilization facilities which handle equal or less plutonium?	23
SCD24	

SCD24-21

Waste Management

An aqueous process for conversion of plutonium would need to be placed in a new facility. Existing canyon facilities are not configured for a plutonium disposition mission and are either shut down or planned for shutdown and D&D.

DOE is committed to waste minimization and pollution prevention throughout the complex.

The remainder of this comment is addressed in response SCD24-10.

SCD24-22

Human Health Risk

As stated in Section 3.4.4.1.2, the 100-mrem dose is the dose measured at an offsite control location. It is the dose strictly associated with the natural background levels of the area; no part of the dose is attributable to above-background sources. Therefore, there is no discrepancy in the assertion of a zero dose (i.e., the dose level above background) for Pantex construction workers. A statement was added to applicable Chapter 3 (Volume I) sections to further clarify this issue.

SCD24-23

Waste Management

The pit conversion facility would convert relatively clean plutonium metal pits to clean plutonium dioxide. In contrast, both the immobilization and MOX facilities mix the plutonium with other materials, increasing the material flow through the facility by a factor of 10 to 20. Additionally, the immobilization facility would handle plutonium in various forms, including fuel rods and plates, impure oxides, and impure metals and alloys. Each form of plutonium requires different processing techniques; some would require significantly more handling than pits require in the pit conversion facility and therefore would generate more TRU waste. Likewise, many steps are needed to fabricate the clean plutonium dioxide into fuel assemblies in the MOX facility. Because the immobilization and MOX approaches are more complicated and process a considerably larger total material throughput, it is estimated that more TRU waste would be produced by the immobilization and MOX facilities than the pit conversion facility.



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August 11, 1998

Ms. Laura Holgate
 Director, Office of Fissile Materials Disposition
 U.S. Department of Energy
 1000 Independence Ave
 Washington, DC 20585

Dear Ms. Holgate:

Citizens for Nuclear Technology Awareness (CNTA) is an organization dedicated to creating greater public awareness of nuclear technology issues and supporting the vital activities of the Savannah River Site.

Earlier this year a committee of our members with an extensive background in nuclear science, project management and plutonium processing conducted a general analysis of the life-cycle cost of locating all three Plutonium disposition facilities at the Savannah River Site (SRS). That analysis, using the best information available at the time, determined that as much as \$1.6 billion could be saved by co-locating all three facilities with other plutonium-related operations and infrastructure at SRS.

Our analysis was never intended to be precise. It was, however, intended to show the magnitude of the cost savings SRS offers. For that reason we were puzzled by the cost report accompanying the draft EIS for Surplus Plutonium Disposition. It lists the cost difference between locating the pit disassembly and conversion operations at Pantex vs SRS to be only about \$60 million (\$920 million at SRS vs \$980 million at Pantex). While your report acknowledges that those estimates could vary as much as 40 percent—potentially making the SRS option \$715 million less expensive than doing it at Pantex—it also could be misconstrued to set the Pantex costs well below those at SRS, something we find incredible.

A detailed review of your report by our experts found that it ignored a number of significant project cost factors, including:

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SCD01-1

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.

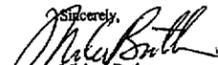
SCD01

* the potential synergy and economies of scale gained by locating all three programs at SRS. Co-locating the plutonium disassembly plant with these facilities and other related operations would surely offer significant cost advantages by way of shared facilities and personnel.

* the extremely high programmatic cost and schedule impact of creating, operating and eventually decommissioning a complete plutonium processing infrastructure at Pantex, where no such infrastructure exists today. Significant plutonium-related support capabilities (RadCon programs, waste management, analytical labs, experienced processing workers, nuclear material accountability programs, etc.) would have to be built from scratch at Pantex. That expensive basic infrastructure already exists at SRS.

Each of those important cost factors was included in our analysis. Attached to this letter are a number of specific related issues our experts identified. We believed that these inadequacies need to be addressed before a final decision is made that may not be in the best interest of the tax payers and our nation's nonproliferation efforts.

We look forward to your consideration of these concerns and anticipate that your decision on site preference for the vital pit disassembly and conversion mission reflects the obvious: SRS is the logical choice for this important program.

Sincerely,

Michael Butler
Executive Director

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SCD01

SCD01-2

Alternatives

DOE acknowledges the commentator's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and has the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

Citizens for Nuclear Technology Awareness
 Questions Concerning Cost Report Inadequacies
 Associated with the Surplus Plutonium Disposition EIS

1. The Cost Report (page 1-10) says DOE's estimate for the immobilization facility was determined on a square foot basis based on experience with similar projects. What were those similar projects? Most of the large comparable nuclear facilities built in this country in the last 15 years have been built at SRS (e.g., DWPF, NSR, HB-Line, RTF). All of them were significantly more per square foot than it appears you are using in the cost report (\$450M/108,000 sq. ft. = \$4200).
2. Both the MOX and Immobilization facilities are estimated at about \$4200/sq. ft. Why is the cost per square foot of the pit disassembly and conversion facility so much less, about \$2900 per sq. ft. of hardened space? (\$440M/~150,000 sq. ft. = \$2900).
3. In the Cost Report (Table ES-2) a number of infrastructure deficiencies at Pantex are identified. How much did you incorporate into the cost study for:
 - Creating strategic nuclear material processing capability at Pantex?
 - Creating radioactive waste management capability at Pantex?
 - Constructing a source calibration facility at Pantex? (The new source calibration facility at SRS cost \$35M)
 - Constructing a plutonium analytical lab at Pantex?

These infrastructure improvements would cost hundreds of millions of dollars to construct and operate. The report did not consider the substantial cost to clean up and remove them at the end of the mission. These costs must be considered for a valid cost analysis.
4. The construction of a MOX plant is reported at \$510M for both Pantex and SRS, yet the Pantex plant is bigger in the EIS. In addition, the Cost Report identifies the major deficiencies in the infrastructure at Pantex which would have to be added to support a MOX operation. How do you explain this?
5. The storage of pits at Pantex is inadequate. The GAO issued a report in April saying worker's health and safety have been placed at risk. The Defense Board says that DOE's efforts to improve storage "appear confused" and lack technical basis. Since the plutonium will have to come to SRS for MOX or immobilization anyway, doesn't it make sense to pack and ship as soon as possible and avoid a large cost to upgrade pit storage. Pit disassembly and Conversion at Pantex means surplus pits will remain in inadequate storage for nearly 20 more years. How much is in the Cost Report to improve pit storage at Pantex? SRS already has NEPA coverage to transport and store up to 20,000 pits in P-Reactor. (Pantex EIS)

3

SCD01

SCD01-3

This comment is addressed in response SCD01-1.

Cost Report

6. Why does a MOX plant (120,000 sq. ft.) require about 50% more construction manpower than the pit disassembly and conversion facility (~150,000 sq. ft.)?
7. The Cost Report says it "does not incorporate possible synergies between co-locating disposition facilities at one site" (page 3.3). What would be the savings if all three missions are located at SRS?
8. Safeguards and Material Control & Accountability requirements are significantly different and more complex for handling plutonium in bulk forms rather than the piece counts employed at Pantex. Where have you evaluated the cost and schedule impacts of major safeguards and MC&A upgrades at Pantex?
9. Where is the cost of facilities required for on-site TRU management and storage for MOX and PDCF facilities at Pantex? Did the assumptions include anything more complex than "pass-through" to WIPP? Have you included the cost of reworking the WIPP EIS to allow shipments from Pantex? Pantex currently cannot ship TRU waste to WIPP, and the EIS says that shipments to WIPP cannot begin until 2016.
10. You have penalized sites other than Pantex with an \$30 million dollar charge for packaging and shipping pits to a pit disassembly facility elsewhere (page 3-4). How much did you penalize a facility at Pantex for the higher cost of shipping plutonium oxide to SRS? Plutonium oxide requires more shipments, requires more extensive packaging and uses higher cost shipping and storage containers than shipping pits.

3

SCD01

3-561

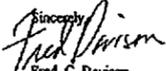
protection and monitoring systems, plutonium capable laboratories, new waste management systems, but most importantly, the entire intellectual infrastructure, competency and experience base. In fact, in 1996 the Department said, in its "Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management", in regard to taking Pantex out of consideration for Pit Manufacturing:

"Plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current plutonium capabilities"

Considering all of the implications of the decisions involved, we believe it would be appropriate that a completely independent assessment of the total costs of locating these facilities separately at Pantex and SRS compared to co-locating all three facilities at SRS be conducted prior to any decisions by the Department as to the preferred sites.

Savannah River has an unequalled history of safe and reliable production, processing, and storage of plutonium. The disposition mission is overwhelmingly supported by the citizenry and officials of the two-state region. SRS is clearly the logical choice for consolidating all three functions.

The CNTA membership includes many experts in large scale plutonium processing. We are prepared to assist the Department in ensuring the success of the Plutonium Disposition Program and we are looking forward to hearing from you in the near future regarding our concerns.

Sincerely,

Fred C. Davison
Chairman

cc: Sen. Strom Thurmond
Sen. Fritz Hollings
Sen. Pete Domenici
Congressman Lindsey Graham
Elizabeth A. Moler

SCD78

facilities, whereas, the pit conversion facility would be a new structure no matter where it is located.

As discussed in Section 1.6, factors used in site selection for the preferred alternative included site infrastructure, mission, and staff expertise. Although Pantex may not currently have the extensive plutonium processing infrastructure already present at SRS, analyses in Chapter 4 of Volume I indicate that impacts of construction and normal operation of the proposed surplus plutonium disposition facilities on infrastructure, health, safety, and the environment at Pantex would likely be minor (e.g., see Sections 4.6 and 4.26.3).

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 at SRS 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.



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September 3, 1998

Ms. Laura Holgate
 Office of Fissile Materials Disposition
 U.S. Department of Energy
 1000 Independence Avenue
 Washington, D.C. 20585

Dear Ms. Holgate:

We are unable to understand DOE's recent decision that the Savannah River Site and the Pantex site are "equally preferred" for siting the pit disassembly and conversion mission.

In 1996 the Department of Energy announced, in the Stockpile Stewardship and Management EIS, that "plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost and complexity of introducing plutonium operations into sites without current capabilities."

The 1996 position was established during consideration of Pantex (and other sites) as potential locations for a pit manufacturing mission. Pantex was disqualified from consideration on the basis of this 1996 position. We have been told that pit manufacturing and pit disassembly and conversion have similarities: both processes are "dry" and involve handling of the plutonium and associated pit parts. Compared to pit manufacturing, the Disposition Program function of pit disassembly and conversion involves a much larger quantity of plutonium and produces plutonium oxide rather than the much easier to manage metallic form. If it is too expensive and complex to introduce pit manufacturing into Pantex, then surely it must follow that it is considerably less desirable to introduce pit disassembly and conversion.

At the public meeting in North Augusta on August 13, your staff was unable to explain why DOE is now considering Pantex. We would very much like to know the following:

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MD245

MD245-1

Alternatives

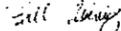
DOE believes that the siting alternatives and analyses included in this SPD EIS are not inconsistent with the *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management (SSM PEIS)* (DOE/EIS-0236, September 1996). The SSM PEIS states that the pit fabrication mission would not be introduced into a site that does not have an existing plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current plutonium capabilities. The SSM PEIS states further that an important element of the site selection strategy is to maximize the use of existing infrastructure and facilities as the nuclear weapons complex becomes smaller and more efficient in the 21st century; thus, no new facilities were to be built to accommodate stockpile management missions. Accordingly, DOE considered as reasonable only those sites with existing infrastructure capable of supporting a pit fabrication mission. Although Pantex has the infrastructure to carry out its current weapons assembly and disassembly mission and a nonintrusive pit reuse program, it was not considered a viable alternative for the pit fabrication mission because it did not possess sufficient capability and infrastructure to meet the SSM PEIS siting assumption stated above. Among the operations that were considered in developing siting alternatives for pit fabrication in the SSM PEIS were plutonium foundry and mechanical processes, including casting, shaping, machining, and bonding; a plutonium-processing capability for extracting and purifying plutonium to a reusable form either from pits or residues; and assembly operations involving seal welding and postassembly processing.

When comparing the site selection strategy for pit disassembly and conversion with that used for the pit fabrication mission, the siting criteria in the SSM PEIS have little or no bearing on siting criteria use in this SPD EIS. Pit disassembly and conversion do not require the foundry and mechanical processes discussed in the SSM PEIS and can be accomplished in a stand-alone facility. Also, the SSM PEIS siting assumptions include a requirement to use existing facilities, whereas, the pit conversion facility would be a new structure no matter where it is located. This SPD EIS analyzes the environmental impacts

- Why was this position changed?
- Who in DOE approved this change?
- What new information exists to warrant this change?
- If aqueous processing is required, would Pantex be dropped from consideration?

CNTA is a non-profit, grassroots organization that includes many of this country's experts in large scale plutonium processing. We are prepared to assist the Department in ensuring the success of the fissile material disposition program. But with DOE engaged in a multi-decade program to downsize, consolidate, and remediate existing plutonium sites, we are unable to understand why DOE would propose creating a new plutonium site. The wisdom of establishing the DOE position in 1996 was obvious to us then, and remains today.

Sincerely,


William C. Reinig
Vice Chairman

cc: Sen. Strom Thurmond
Sen. Fritz Hollings
Congressman Lindsey Graham
Honorable Bill Richardson
Greg Rudy
David Nulton

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MD245

of construction and operation of these facilities at the four candidate sites, including the impact on infrastructure.

Appendix N of the SPD Draft EIS analyzed the plutonium-polishing process (by which impurities could be removed from the plutonium feed for MOX fuel fabrication) as part of either the pit conversion or MOX facility. However, 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. Therefore, the polishing process is not a consideration in siting the pit conversion facility. The alternatives that include siting the MOX facility with plutonium polishing at Pantex are reasonable and are therefore included in the SPD Final EIS. 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.

As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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.

Author: HOWARD CARTER at md-01
Date: 9/16/1998 7:52 AM
Priority: Normal
TO: DAVID NULTON, BERT STEVENSON
Subject: Savannah River site

I am writing to express my extreme displeasure with the quality of the hearings held in N. Augusta a few weeks ago. Those were not public hearings, they were cheerleading exercises for the SRS employees and local officials elected by those employees. The people of N. Augusta and Aiken do not speak for the whole state of SC. Of course the people who were there were in favor doing "plutonium disposition" in SC. Their employer (SRS) gave them the day off and told them to come down to the hearings in a show of support. Who is going to come and argue against his neighbor in N. Augusta? This was not a fair hearing, and did not represent the opinions of the majority of S. Carolinians. I demand that DOE hold other hearings around the state, at least in Columbia, Charleston, and Savannah. British Nuclear Fuels, who will be running SRU, does not have a great environmental record in Europe. The people of this state deserve to hear the WHOLE STORY about plutonium reprocessing and all of its effects on health and the environment. If the citizens of S.C. are going to be asked to assume the risks inherent in taking all of the weapons grade plutonium, we deserve to have some input into the decision making process. And, we are unequivocally opposed to MOX fuel, and there will be a fight about this, I guarantee it. Plutonium should not be used as an energy source. It should be collected, immobilized, and safely stored away, never to re-enter the environment again. I don't know who came up with this MOX idea, but it is a bad one, and I don't care what the Russians are doing, we need to take the environmental high road and tell them MOX is a bad idea, and we can't support it. Vitrification is the preferred method of disposition, but SHOW US THE PERMANENT SITE, PLEASE, otherwise, we don't want it coming here, because we don't trust you to ever take it away. We believe it will stay here forever, and SC is not a good site for permanent disposal. I am sure you will hear more from me, I am angry that this plutonium reprocessing monster has reared its ugly head again. It was a bad idea when Carter hixed it, and it's still a bad idea.

Thank you for your time, please consider holding more hearin

gs,
especially in Columbia,

Susan Corbett
2701 Heyward St.
Columbia, S.C. 29205

FD333

FD333-1

General SPD EIS and NEPA Process

DOE acknowledges the commentator's concerns regarding the public hearing. DOE employees and contractors at SRS were neither granted leave nor ordered to present their views at the North Augusta hearing; they attended in an official capacity or took personal leave to attend. DOE believes that the hearing was objective and open; all attendees were given an opportunity to provide comments orally or in writing. It was simply not feasible to hold public hearings in every location, including the locations suggested by the commentator.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites, and thus, with the most directly affected populations. This decision did not preclude relevant comment by State and local government, tribes, individuals, and organizations. 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 they were submitted.

FD333-2

Alternatives

DOE acknowledges the commentator's opposition to the MOX approach. 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. Pursuing both immobilization and MOX fuel fabrication provides the United States important insurance against potential disadvantages of implementing either approach by itself.

DOE is not considering reprocessing any of the surplus plutonium that is the subject of this SPD EIS. 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.

DOE is not considering disposal of surplus plutonium in South Carolina. The proposed facilities would process the surplus plutonium so that it can be permanently disposed of in a potential geologic repository. Only the immobilized plutonium, in canisters of vitrified waste from DWPF, would be stored at SRS for any length of time, pending availability of the potential geologic repository. 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.

This SPD EIS, for the purposes of analysis, assumes that Yucca Mountain, Nevada, would be the final disposal site for all immobilized plutonium and MOX spent fuel. As directed by the U.S. Congress through the NWPA, as amended, Yucca Mountain is the only candidate site currently being characterized as a potential geologic repository for HLW and spent fuel. DOE has prepared a separate EIS, *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), which analyzes the environmental impacts from construction, operation and monitoring, related transportation, and eventual closure of a potential geologic repository.

DOE also appreciates the commentor's concern that surplus plutonium disposition activities not contaminate the environment. This EIS analyzes the potential environmental impacts associated with implementing the proposed activities at the candidate sites. The results of these analyses, presented in Chapter 4 of Volume I and summarized in Section 2.18, demonstrate that the activities would not have major impacts at any of the candidate sites. 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.

My name is Susan Corbett and I'm calling to make some comments about the DOE hearings in North Augusta regarding the plutonium disposition plans for Savannah River Site. I live in Columbia and I drove down to the hearings hoping to hear some open discussion and debate of the issues. I was very disappointed and very angry at what I saw. It was a completely one sided conversation. It, this is, this is not a public meeting. Basically what I, what I could see, what I could hear was that the SRS had given their employees a day off so that they could come down and have a show of support for, you know, basically lining their own pockets by creating more jobs and, you know, having more money for their own personal little infrastructure there in North Augusta and Aiken and I put forth the idea that North August and Aiken does not speak for the whole State of South Carolina. And we are being asked to assume a number of risks by allowing this plutonium to be brought here. And I believe that there should be other hearings around the State and around Georgia, around that area too, Savannah probably, definitely Columbia, possibly Charleston, other places that stand to be affected by this process, and places where it's a true public cross section of the public. Nobody in North Augusta is going to come and argue against their neighbors employer. It just wouldn't be the right thing to do and so it is not a level playing field. It is not an objective group of people. This is their livelihood. Of

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PD059

PD059-1

General SPDEIS and NEPA Process

DOE acknowledges the commentor's concerns regarding the public hearing. DOE employees and contractors at SRS were neither granted leave nor ordered to present their views at the North Augusta hearing; they attended in an official capacity or took personal leave to attend. DOE believes that the hearing was objective and open; all attendees were given an opportunity to provide comments orally or in writing. It was simply not feasible to hold public hearings in every location, including the locations suggested by the commentor.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites, and thus with the most directly affected populations. This decision did not preclude relevant comment by State and local government, tribes, individuals, and organizations. 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 they were submitted.

course they want more jobs there. Personally the State of South Carolina is not hurting for jobs so much that we need to bring in jobs and industries that create more pollution. This is already a very contaminated State and Savannah River is already a very contaminated river and I am basically opposed to bringing any more industries that can pollute and contaminate our State. I understand something has to be done with the plutonium and the warheads. At this point I would say that vitrification is definitely the preferred method.

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I am not in favor of MOX. I am absolutely opposed to MOX. I think that there are a lot of people that are going to be opposed to MOX. We do not want to see plutonium used as an energy source and set the very bad precedent to start doing that. And I, I heard some comment about well once they got all this weapons stuff burnt up in the MOX fuel they wouldn't make any more. I don't believe that for a second. I believe that once that facility is built and the capability is set up, that there will be an ongoing push to continue to use plutonium as an energy source. Now that's going to be a fight there I can guarantee it. There are a lot of people who are opposed to that. That's why the breeder reactor program never got off to the start. That's why Carter and his administration nixed it. It was a bad idea then, it's a bad idea now.

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PD059

PD059-2

Immobilization

DOE acknowledges the commentor's support for the immobilization approach to surplus plutonium disposition. 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. 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.

PD059-3

MOX Approach

DOE acknowledges the commentor's opposition to the 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

Vitrification is the preferred method for dealing with this plutonium. I don't want to comment at this point about exactly where or when. I, I think that we need to move a little more slowly in this and look at it carefully and make sure we're doing the right thing. I understand that there are vitrification problems at Savannah River right now with the existing high level waste that they have down there. And I think the DOE is rushing forward with this a little too cavalierly and I would like to see the process slowed down for more public education, more public input, more discussion around this area and definitely no MOX fuel. That is just not going to fly here.

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And I was very, like I said, very disturbed by those hearings. I don't think I've ever been to a public hearing where there was a more one-sided discussion. It was just, didn't even have the slightest hint of being an objective, diverse discussion. It was obviously so one-sided. And I think we need to here opposing voices and other points of view. But people are not going to come out in their own neighborhood, against their own neighbors. It just isn't fair to ask people to do that. So I know there are people in North August that have concerns but it would be difficult for them to speak out. And basically, as a person who went down to just listen and be objective, it would have been difficult for me to get up and ask questions because the environment was basically pretty hostile against anybody who wanted to question or, you know, look twice critically at this whole issue. And that, that is not the right way to conduct public hearings. We need to move around the state so we can hear other voices on the whole issue. That's all I have to say and I hope that you will consider these comments seriously. Thank you for listening. Bye-bye.

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PD059

operational life is expected to last beyond the life of the surplus plutonium disposition program. Should additional plutonium be declared surplus in the future, it is likely that MOX fuel fabrication would be a proposed disposition method if it proves successful, and the additional plutonium were amenable to MOX fabrication. However, additional NEPA would be required at that time to evaluate the potential impacts and inform the public.

The remainder of this comment is addressed in response PD059-1.

Author: Martha Grosland at EM-06
Date: 8/26/1998 7:00 PM
Priority: Normal
TO: David Multon at MD-01, Bert Stevenson at MD-01
CC: Bruce Bornfleth at ES
Subject: Savannah River site

Dave and Bert:

The following stakeholder concern would seem to relate to the public hearings on the MD PEIS. I would assume that your office is the appropriate one to respond and if so please confirm with Bruce Bornfleth.

Thanks,
Martha

Subject: Savannah River site
Author: Bruce Bornfleth at OSF
Date: 8/26/98 2:53 PM

Martha,

Skila Harris asked that I forward this message to you. She suggested you would know the appropriate person to respond to this stakeholder.

Thank you,

Bruce Bornfleth, 586-4040

Subject: Savannah River site
Author: jcorbett@gateway.net_at_INTERNET at X400PO
Date: 8/26/98 12:38 PM

Hi, I am a concerned citizen of South Carolina, who has just recently found out about the plans DCE has for the Savannah River site. I went to N. Augusta to the hearings and was completely outraged. That was not an objective, fair public hearing. SRS gave their workers the day off to turn out in a show of force. There was no constructive or objective discussion or dialogue. As a citizen of this state, I resent the fact that a few members of a small, self-interested community dare to speak on behalf of the whole state regarding such a high risk venture as pit disassembly, MOX fabrication and Pu vitrification. I demand that DOE hold hearings in a more neutral venue, to allow for real discussion and the opposing views to be heard by the public. The hearings in N. Augusta were a sham and a white washing. Hearings should be held in Columbia, Savannah, and Charleston, at the very least. Sincerely, Susan Corbett

FD172

FD172-1

General SPD EIS and NEPA Process

DOE acknowledges the commentator's concerns regarding the public hearing. DOE employees and contractors at SRS were neither granted leave nor ordered to present their views at the North Augusta hearing; they attended in an official capacity or took personal leave to attend. DOE believes that the hearing was objective and open; all attendees were given an opportunity to provide comments orally or in writing. It was simply not feasible to hold public hearings in every location, including the locations suggested by the commentator.

To provide for public comment on the SPD Draft EIS, DOE conducted public hearings near the potentially affected DOE sites, and thus with the most directly affected populations. This decision did not preclude relevant comment by State and local government, tribes, individuals, and organizations. 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 they were submitted.



Fred E. Humes
Director

September 15, 1998

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

Dear Ms. Holgate:

At your August 13, 1998 public meeting on the Surplus Plutonium Disposition (SPD) Draft Environmental Impact Statement (DEIS) I spoke in favor of siting all three portions of the SPD program at the Savannah River Site. A copy of my comments are attached. At this time I want to highlight my two comments regarding what I consider to be deficiencies in the DEIS, and recommend that the EIS be revised before issuance in final.

1. The Environmental Consequences analyses for the Pantex alternative does not reflect the increased probability and severity of environmental releases and worker safety risk resulting from (1) a lesser level of site plutonium infrastructure and (2) inexperienced workers handling and processing plutonium in metal and oxide forms. If pit disassembly and conversion is assigned to Pantex, there will be a "learning curve" as Pantex workers become familiar with handling a new material in new facilities and that the learning process will result in an increased incidence of operator errors and equipment failures. Such errors and failures will result in increased environmental impacts at Pantex when compared to the experienced personnel and extensive infrastructure which exist at Savannah River. The Draft EIS assumes that the probability and consequence of off-normal conditions are equal for Pantex and Savannah River - and that is not realistic. I suggest that you solicit the input of the Defense Nuclear Facilities Safety Board in quantifying the increased risks and impacts associated with startup of plutonium processing at Pantex. Without this analysis, the SPD-DEIS does not adequately address all environmental impacts.
2. The SPD-DEIS states that cost differences between Pantex and Savannah River are "within the uncertainty of cost estimates." That conclusion is not supported by the facts contained in the DEIS. The Draft describes the many facilities and operating capabilities which currently exist at Savannah River and which must be constructed or established at Pantex. In addition, the Draft identifies the many instances of program synergy that would exist at Savannah River and which

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FD313

FD313-1

Human Health Risk

DOE acknowledges the commentator's concerns regarding potential facility accidents and human health risks. Training would be conducted on mock, nonradiological material before facility processes became operational, so the "learning curve" would be largely completed before operation with radiological material. The probabilities of operational error cannot be meaningfully estimated, particularly for processes and procedures that are not yet fully developed, and for bounding accidents whose frequencies are low to begin with. In any case, the estimates of accident frequency presented in this SPD EIS are sufficiently conservative to bound any hypothetical increase in the probability of environmental releases.

FD313-2

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. The cost report was independently reviewed by an outside architect-engineering firm before being released to the public. Any future updates to this report will also be independently reviewed.

cannot exist at Pantex. Either your conclusion must be changed or it must be supported by analysis. If DOE continues to believe that the comparative costs are "within the uncertainty of cost estimates" then DOE must prove that assertion. Review of the comparative estimates by a authoritative independent third party, such as the General Accounting Office, is one means of addressing this deficiency.

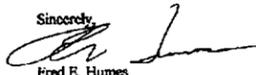
2

Both of these deficiencies are more acute if a plutonium finishing module is included in the pit disassembly or MOX fabrication process.

We fully support the national program to dispose of United States and Former Soviet Union weapons-capable nuclear materials, and look forward to final approval and authorization of the Surplus Plutonium Disposition program.

Thank you for the opportunity to provide comments on this very important national program.

Sincerely,



Fred E. Humes
Director

FD313



Fred E. Humes
 Director

Statement for the Record
Surplus Plutonium Disposition Draft
Environmental Impact Statement
 August 13, 1998

Good Afternoon, my name is Fred Humes and I am Director of the Economic Development Partnership, a non-profit organization with responsibility for economic development in both Aiken and Edgefield Counties. The Savannah River Site is an important and treasured part of our manufacturing community because its long history as a safe and environmentally responsible neighbor. We are proud of our role in helping to win the cold war, and we are equally proud of our future role in helping to reduce the nuclear danger by the disposition of excess plutonium from the weapons program. We are pleased and appreciative the Department has recognized the Site's capabilities for the Mixed Oxide Fuel fabrication and Immobilization portions of the disposition mission. We believe the identification of SRS for these two missions will provide the country the greatest assurance that plutonium will be prepared for fabrication and disposition in the safest, most efficient and most reliable manner.

3

However, we are perplexed and concerned that DOE has not made the same determination regarding site selection for the Pit Disassembly and Conversion Facility. The draft EIS is replete with data which outlines the currently operational plutonium processing and radioactive waste management capabilities existing at SRS, and the document is equally clear that those same capabilities do not exist at the Pantex site. Therefore, in my opinion it is incredulous that the EIS concludes there are only "modest differences" between SRS and Pantex.

The data demonstrates there are significant differences between SRS and Pantex when evaluating the location for the Pit Disassembly and Conversion Facility:

4

First and foremost, Savannah River has a forty-year history in all aspects of the safe handling and storage of plutonium. Savannah River's unparalleled safety record is the result of possessing a complete complement of specialized facilities and personnel with many years of "hands on" plutonium experience. Neither facilities nor the expertise exist at Pantex. Several hundreds of millions of dollars will be wasted just to build and operate new types of facilities needed for safe operations at Pantex; ranging from waste management to environmental monitoring to laboratory support facilities. But even if you wasted the dollars, you can never make up for the lack of plutonium experience in the Pantex workforce. Operating proficiency at Pantex could only be gained after many years of trial and error - years with inevitable low productivity, operating errors, safety incidents and environmental releases. It is irresponsible for DOE to

5

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FD313

FD313-3

Alternatives

DOE acknowledges the commentor's support for siting the immobilization and MOX facilities at SRS. As indicated in Section 1.6, the preferred can-in-canister approach at SRS complements existing missions, takes advantage of existing infrastructure and staff expertise, and enables DOE to use an existing facility (DWPF). 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.

SRS is also 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 SRS 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.

FD313-4

Alternatives

DOE acknowledges the commentor's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

3-575

Comment Documents and Responses—South Carolina

impose on an inexperienced Pantex workforce these operational, safety and environmental problems, let alone on the citizens of the Texas panhandle.

The second compelling difference between Savannah River and Pantex is economics. The draft EIS describes the many facilities and operating capabilities that currently exist at Savannah River that will have to be duplicated at Pantex. Additionally, the document identifies the many instances of synergy that exist only at Savannah River as the PD&CF shares capabilities with current missions and the Immobilization mission. These differences exist today and cannot be dismissed as "within the uncertainty of cost estimates." Our region is competitive with all areas of the country in regards to construction and operations wage rates. In the private sector, we compete daily on an international basis for industries to locate in our area - and we are very successful. In the last two years, over two billion dollars in new private sector investment were announced in the Aiken-Augusta area - business decisions that were made because of our skilled labor force, competitive wage structure, and favorable business climate. Therefore, I do not agree with your conclusion that Pantex operating costs are less than Savannah River, or that total costs could be within seven percent.

The third significant difference between Savannah River and Pantex is the broad base of community support for SRS activities. This support includes two states, two Congressional Delegations, urban and rural constituents, site workers and people with no connection with SRS. That support is grounded in the knowledge that SRS has a paramount concern for safety, and that the site has a positive impact on the economic, social, cultural and educational base in our area. This relationship is priceless in today's environment, and provides DOE with confidence that programs assigned to the SRS will be carried out as planned.

A fourth consideration is the potential need to incorporate a Plutonium Polishing module in the pit conversion facility. Processing facilities, personnel expertise, and infrastructure to meet this need are currently operational at the Savannah River Site; the same capability does not exist at Pantex. Savannah River facilities are sufficiently flexible to accommodate all foreseen polishing requirements, guaranteeing a reliable supply MOX-grade plutonium oxide to the fuel fabrication vendor. Once again, the assignment of the Pit Disassembly and Conversion Facility to Savannah River will assure the safe performance of this critical step, save the taxpayer tens of millions of dollars and provide the highest confidence that the Plutonium Disposition mission is conducted in the most expeditious manner.

Specific comments on the draft EIS are as follows:

1. Revise the Environmental Consequences analyses for the Pantex alternatives to appropriately reflect the increased probability of environmental releases and safety concerns resulting from operational errors as Pantex employees go through the learning curve associated with handling and processing plutonium. Input from

5

6

FD313

FD313-5

Other

All candidate sites have strong community and elected official support. In addition, the candidate sites are equally suitable from a safety and conduct of operations standpoint and all sites must comply with DOE environmental, safety, and health requirements.

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 dioxide.

The remainder of this comment is addressed in response FD313-2.

FD313-6

Facility Accidents

This comment is addressed in response FD313-1.

the Defense Nuclear Facilities Safety Board could assist in this evaluation. | 6

2. Submit your comparative cost estimates to an outside third-party review to assure that the operational and estimating basis for construction and operating costs, and required infrastructure are on a totally comparable basis. The General Accounting Office is one possible source for this review. | 7

My final comment is that we not lose sight of the important objective that you are implementing - that being to safely dispose of the excess supply of weapons capable plutonium. This is extremely important - both today and for future generations. Because of that importance and urgency, it must be entrusted to those who have demonstrated the capability to safely perform the mission. Now is not the time to train rookies. Now is the time for the first team to be in the game. The clear choice for the Pit Disassembly and Conversion Facility is the Savannah River Site! | 8

Thank you for the opportunity to present these comments.

FD313

FD313-7

Cost Report

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. The cost report was independently reviewed by an outside architect-engineering firm before being released to the public. Any future updates to this report will also be independently reviewed.

FD313-8

Alternatives

This comment is addressed in response FD313-4.



United States
Department
of Energy

Comment Form

NAME: (Optional) W. Glenn Fidds
ADDRESS: 291 Hickory Ridge Rd Aiken SC 29803
TELEPHONE: (803) 648-6696

E-MAIL: _____
I was born and raised in Aiken, SC, and have lived here (area)
for all but 3 years of my life.

As a young boy of 12 to 17 years old and since, I have been
exposed to the professionalism and safety attitudes of SRS/SRS
employees. I have worked at several different industrial sites in
the SCRA before going to work at SRS in 1984. The positive
influence that I have experienced from people who work at SRS, both
before and since my employment, convince me that SRS would
be the safest place to locate all plutonium.

I personally know and experience the dedication to safety and
professionalism of SRS employees every day. I am confident
that the best place for plutonium, from all aspects of consideration,
is SRS.

SCD62

SCD62-1

Alternatives

DOE acknowledges the commentor's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.



August 13, 1998

Gentlemen and Ladies:

Good afternoon. I am Fred Andrea, Senior Pastor of First Baptist Church in Aiken, South Carolina. I am here to express my support for SRS and its employees. Many of the employees are members of my church family.

SRS and its employees are special to this community. Their contributions to our nation's security are many and significant. Over the last five years, SRS has lost over 10,000 jobs, yet the employees and this community have never lost their faith in the future or their commitment to continue the long history of safe and effective operations at SRS.

We know that the capabilities that exist at SRS are not found at the other DOE sites. We know that the Plutonium Disposition Missions which are so important to our national and international security require these capabilities. The decision should be easy but, for some reason, may become far more complicated than necessary. Of course, there being absolutely no politics in the local church, you would understand that I know nothing whatsoever about such matters. I trust and pray that this decision will not be determined by political considerations.

In fact, I am here today to let you know that, as a minister, I will be going to a higher authority than elected officials to encourage the Department of Energy to make the right decision for this nation and its taxpayers!

Seriously, Savannah River Site is the right choice for this mission. Impeccable safety and environmental protection records, cost effective operations, existing operating infrastructure, plutonium experience and expertise, and a second-to-none community support level undergird the soundness of this choice.

Thank you for this opportunity to express my wholehearted support for Savannah River Site. I do pledge my earnest prayers for wisdom and courage as this significant decision is made.

Yours sincerely,

Fred W. Andrea III

FWA:ean

Post Office Box 3157 ■ Aiken, South Carolina 29802-3157 ■ York Street at Richlar ■ Fax (803) 648-4453

SCD23

SCD23-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

August 31, 1998

U. S. Department of Energy
Office of Plutonium Materials Disposition
SPD EIS
P. O. Box 23786
Washington, DC 20026-3786COMMENTS ON SURPLUS PLUTONIUM DISPOSITION
ENVIRONMENTAL IMPACT STATEMENT
& COST REPORTI. EIS Inadequacies

- Appendix N, Plutonium Polishing, shows that an aqueous process can purify plutonium and produce plutonium oxide with very little waste. Since dissolving plutonium metal is easier than dissolving plutonium oxide, it stands to reason that direct dissolving of pits is a reasonable alternative. The alternative of dissolving pits using a facility and process similar to that described in Appendix N must be included and assessed versus the proposed dry process for pit conversion to have a valid NEPA document. 1
- The frequency, consequence, and risk of airplane crashes into plutonium facilities at Pantex has been changing in each document issued by DOE. It seems that these risks have been declining because DOE has been finding ways to justify less conservative methodologies. DOE should use the standard NRC methodology (NUREG 0800) for calculating the risk associated with an airplane incident. This is the only widely accepted methodology in this country for analysis of nuclear facilities subject to airplane crashes. 2
- The Nuclear Weapons and Material Monitor reported that there was an Appendix B which evaluated an aqueous alternative for pit conversion and concluded that it could be done faster and used proven technology. This option cannot be withheld from the EIS. 3
- The EIS claims that the proposed dry process for pit conversion produces less waste. This is truly puzzling. There is no data in the EIS to support this claim. Appendix N shows aqueous processes can be operated to produce very little waste. 4
- If you used an aqueous process to make pure plutonium oxide, there would be big savings in the cost and environmental impact of both the MOX and immobilization plants. The plants could be smaller, less automated, and much less R&D would be required. The choice of 5

MD131

MD131-1

Plutonium Polishing and Aqueous Processing

DOE determined that aqueous processing was not a reasonable alternative for pit conversion because current aqueous processes using existing facilities would produce significant amounts of waste, and aqueous processing would complicate international safeguard regimes. Dry processing was analyzed in the *Storage and Disposition PEIS* and this SPD EIS. DOE is currently demonstrating the dry plutonium conversion process as an integrated system at LANL. This activity is described in the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998), which is available on the MD Web site at <http://www.doe-md.com>. There is no alternative in this SPD EIS that evaluates dissolving pits.

DOE is not including the plutonium-polishing process (a small-scale aqueous process) as part of the pit conversion facility; that process would be part of the MOX facility. DOE would use only dry processes in the pit conversion facility. For this reason, the thermal process for removing gallium may not be needed in the pit conversion facility (see revised Section 2.4.1.2). Plutonium dioxide is the starting form for the disposition of surplus plutonium for either the immobilization or MOX fuel approach.

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 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.

MD131-2

Facility Accidents

DOE published a standard to address the issue of aircraft crash analysis entitled, *Accident Analysis for Aircraft Crash Into Hazardous Facilities* (DOE-STD-3014-96, October 1996). DOE was cognizant of NRC NUREG-0800 in its development of DOE-STD-3014. The method outlined in DOE-STD-3014 is the one used for this SPD EIS. Estimated frequencies, consequences, and risks of aircraft crashes depend on a number of factors, such as building size

and shape; building robustness; and the quantity, form, and containment characteristics of the hazardous material. As a result, one would not expect to see the same numbers published for differing applications of the same methodology, namely, that of DOE-STD-3014. The frequency of aircraft crashes into a pit conversion or MOX facility is lower than that of crashes into the entirety of Zone 4 or Zone 12 mainly because the facilities are smaller than the zones.

MD131-3 Plutonium Polishing and Aqueous Processing

This comment is addressed in response MD131-1.

MD131-4 Waste Management

The *Storage and Disposition PEIS* evaluated an aqueous plutonium conversion process similar to that used in the SRS canyons. A plutonium conversion process is needed to convert plutonium metal to an oxide for use in either the immobilization or MOX facility. Compared with the dry conversion processes evaluated in this SPD EIS for use in the pit conversion and immobilization facilities, the aqueous conversion process evaluated in the PEIS would generate significantly more radioactive waste as shown below:

Type of Waste (m ³ /yr)	PEIS Plutonium Conversion	SPD EIS	
		Pit Conversion	Immobilization
LLW	1,799	60	81
Mixed LLW	191	1	1
TRU	472	18	95

MD131-5 Plutonium Polishing and Aqueous Processing

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

SPD EIS AND COST REPORT COMMENTS

- | | |
|---|----|
| aqueous vs. dry for pit conversion must include the impact on downstream processes to be valid.. | 5 |
| • The dry process for pit disassembly and conversion was advertised as smaller and cheaper than traditional (aqueous) processes. This EIS says this facility is 186,000 sq. ft. That's bigger than a canyon building! This doesn't seem to be smaller and cheaper! | 6 |
| • A recent amendment to the MOX RFP says DOE will pay the delay cost associated with failure to deliver acceptable PuO ₂ on schedule. This change seems to represent the vendors lack of confidence in DOE's plan to use ARIES-produced oxide. | 7 |
| • A pit disassembly and conversion plant at Pantex will have to high-fire the plutonium oxide to comply with DOE Standard 3013 for shipment and storage. The high-fired oxide is unlikely to be usable for either MOX or immobilization without extensive pretreatment. If aqueous polishing is required, the Oak Ridge reports says the feed cannot be high-fired. At the public meeting DOE said maybe they wouldn't comply with Standard 3013. Has the transportation and storage of non-3013 oxide produced by the pit disassembly plant been reviewed with the DNFSB? They are unlikely to agree with this approach - particularly given Congress's expressed reluctance to proceed beyond pit disassembly and conversion anytime soon, the likelihood of extended storage is very real. Also, was the EIS accident and transportation analysis based on fine dispersible low-fired powder typical of aqueous produced oxides, or the high-fired clinkers likely to be produced by TIGR or direct oxidation methodologies? | 8 |
| • The F-Canyon and New Special Recovery (NSR) facility at SRS capable of doing the conversion of plutonium metal from pits to plutonium oxide (NSR was ready to start up on this program in 1991). There is no analysis of the savings possible by using existing facilities at SRS for converting plutonium to the oxide form for MOX or immobilization. Since the SRS facilities are already operating and have most of the capabilities needed for this activity, there would be a big savings of time, investment, and future cleanup. The EIS must include an analysis of this obviously available and reasonable strategy to be valid and complete. Since all of the commercial MOX plants in Europe use aqueous feed prep techniques, this is certainly a reasonable approach which must be analyzed. | 9 |
| • Appendix N, Plutonium Polishing, is presented as a "contingency". What is the legal status of a "contingency" or an Appendix? Generally a NEPA issue has to be presented as part of the proposed action, available for public review and comment, to be a legal basis for decision. | 10 |
| • The basis for the determination of the split of material to MOX or immobilization has not been presented in the EIS for public review. Some DOE documents report the quantity of "clean" metal and oxide significantly higher than 33MT. The 17 MT planned for immobilization are, in fact, not all low plutonium content and low purity. In fact, a large part is already FTFE MOX fuel. Where are the studies and where are the costs for determining this split need to be presented for public review. | 11 |

R. L. Geddes

² MD131

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. This new report includes the cost associated with plutonium polishing in the estimates for the MOX facility.

The remainder of this comment is addressed in response MD131-1.

MD131-6 Pit Disassembly and Conversion

The space needed for the dry process is expected to be smaller than that needed for the aqueous process. The estimated maximum floor space required for the proposed pit conversion facility using the dry process is approximately 8,055 m² (86,700 ft²) for Pantex. The canyons at SRS are much larger than the proposed pit conversion facility. The footprint alone of F-Canyon is over 23,876 m² (257,000 ft²). If one were to add up all of available floor space throughout the building, it would be over 464,515 m² (500,000 ft²).

MD131-7 MOXRFP

The failure or delay of DOE to deliver plutonium dioxide to the contractor according to schedule would require the contractor to supply its mission reactors with replacement LEU fuel at increased costs. This amendment to the RFP is for the protection of the contractor, regardless of the source of the delay in providing the plutonium dioxide.

MD131-8 Pit Disassembly and Conversion

It is not certain that plutonium dioxide would have to be high-temperature fired prior to shipment and storage to meet the DOE 3013 standard, *Criteria for Preparing and Packaging Plutonium Metals and Oxides for Long-Term Storage*. High-temperature-fired dioxide can be used for either the immobilization or MOX approach; it just does not dissolve as readily as material that has not been subjected to the higher temperatures. The report to which the commentator may be referring, *Final Data Report Response to*

the Draft Surplus Plutonium Disposition Environmental Impact Statement Data Call for Generic Site Add-On Facility for Plutonium Polishing (ORNL/TM-13669, June 1998) indicates that it is better not to subject the plutonium dioxide to the higher-temperature processing, but does not indicate that plutonium dioxide processed at higher temperatures is unacceptable as feed for either immobilization or MOX fuel fabrication. The transportation analysis assumes the oxides would be in compliance with the DOE 3013 standard.

The remainder of this comment is addressed in response MD131-1.

MD131-9 Plutonium Polishing and Aqueous Processing

Use of F-Canyon at SRS to convert plutonium for use in either the immobilization or MOX facility would require reconfiguring the canyon and keeping it in operation for another 10 years or more. DOE has already made a commitment to the public, the U.S. Congress, and DNFSB to shut the canyon down. DOE presented the SRS Chemical Separation Facilities Multi-Year Plan to Congress in 1997. This plan provides the DOE strategy for the expeditious stabilization of SRS nuclear materials in accordance with DNFSB Recommendation 94-1, and provides for the early stabilization of certain limited quantities of plutonium materials from RFETS. Once this stabilization effort was complete, the canyon would be shut down and D&D activities would begin. In addition, this process would make the surplus material considerably more weapons-usable, and as such would not fulfill the purpose and need of the proposed action.

The remainder of this comment is addressed in response MD131-5.

MD131-10 Plutonium Polishing and Aqueous Processing

CEQ regulations for NEPA in 40 CFR 1502.18 state that an appendix shall: (a) consist of material prepared in connection with an EIS (as distinct from material which is not so prepared and which is incorporated by reference); (b) normally consist of material which substantiates any analysis fundamental to the EIS; (c) normally be analytic and relevant to the decision to be made; and (d) be circulated with the EIS or be readily available on request. In accordance with CEQ regulations, lengthy technical discussions of modeling

methodology, baseline studies, or other work are best reserved for an appendix. In other words, if technically trained individuals are the only ones likely to understand a particular discussion, then that discussion should be included as an appendix, and a plain language summary of the analysis and conclusions of that technical discussion should be included in the text of the EIS.

MD131-11**DOE Policy**

The quantities and locations of surplus weapons-grade plutonium material are discussed in Chapter 1 of the *Storage and Disposition PEIS*. As shown in Section 2.2.1 of the PEIS, Hanford had 11 t (12.1 tons) of plutonium material, of which only about 4 t (4.4 tons) fell within the scope of weapons-usable plutonium as defined in the document. The *Storage and Disposition PEIS* ROD determined that DOE would immobilize at least 8 t (9 tons) because it was not suitable for MOX fuel fabrication due to the complexity, timing, and cost that would be involved in purifying these materials. As described in this SPD EIS, DOE identified an additional 9 t (10 tons) of plutonium as unsuitable for the same reasons. For analysis purposes, this EIS assesses the environmental impacts of implementing the hybrid approach (immobilizing 17 t [19 tons] of surplus plutonium and using 33 t [36 tons] for MOX fuel) and immobilizing all 50 t (55 tons) of surplus plutonium.

SPD EIS AND COST REPORT COMMENTS

- DOE is preparing to perform a large scale demonstration of the ARIES process at LANL using a separate local EA as the NEPA basis. Since this activity is intimately connected with the pit disassembly and conversion proposal, this LANL activity should be analyzed in the SPD EIS, not a separate document. What is the plan for storing the oxide product of this demonstration and where is the NEPA coverage? The Los Alamos vaults are apparently full since Los Alamos is asking SRS to take some material to prevent shutdown of their development program. 12
- The MOX Request for Proposal (RFP) has been revised five times since its original issue just over three months ago in May. MOX feed is now described as being produced by a "dry process" rather than the original hydride-dehydride process. What is the significance of this change? What process is described in the EIS? Will the EIS be revised to incorporate the evolving process proposed for Pit Disassembly and Conversion? 13
- EM is going to use the SRS FB-Line facilities to declassify a large quantity of plutonium metal from Rocky Flats. These facilities could be used for a similar "Quick Start" approach for pits? It is likely that most of the pits could be demilitarized, declassified, and prepared for safe storage using existing facilities at SRS before the program as currently envisioned could even begin. Since this is obviously a fast, cheap approach using existing facilities, it is also a reasonable approach which must be analyzed in the EIS. 14
- The Cost Report says the pit disassembly and conversion facility will begin operation in 2004. This is a \$500 million dollar facility using first-of-a-kind technology. DOE has been unable to bring any facility of this size on-line in less than 10 years, and 15-20 is not unusual, since the early days of the Manhattan project, much less one using undemonstrated technology. This is simply not a reasonable basis for NEPA analysis. 15
- The EIS (page S-27) says the MOX campaign will require 11 years to disposition plutonium. The MOX RFP says 15 plus. Pit disassembly and conversion and immobilization are still in the early R&D stages. And, no SNM processing facilities have ever been built in a three-year timeframe by DOE in recent decades. None of these schedules have any basis in reality, nor are they a realistic basis for NEPA analysis. An overly optimistic schedule is not bounding in NEPA terms. An extended schedule results in greater waste, exposure, risk, and impact. 16
- The dry process for disassembly and conversion will leave residual plutonium contamination on thousands of highly enriched uranium parts making them unsuitable for shipment to Oak Ridge as described in the EIS. The only technology currently used for decontamination of uranium pieces like this is aqueous-based. Where is this described in the EIS. I don't see this process and its wastes in the pit disassembly description. 17

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MD131-12

Pit Demonstration EA

DOE believes that it took the correct NEPA approach with regard to the action proposed in the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998), and that this action does not prejudice future action under this SPD EIS. In that EA, DOE proposed a limited-scope demonstration at LANL to test an integrated pit disassembly and conversion process on a relatively small sample of plutonium pits (250) and metals. The information gathered from the demonstration will be used to supplement information developed to support the construction of a full-scale pit conversion facility, if DOE decides to build such a facility based on analysis presented in this SPD EIS. In compliance with DOE's NEPA regulations (10 CFR 1021), that EA discussed the No Action Alternative in addition to the proposed action. Based on the analysis in the EA, DOE concluded that the proposed action did not constitute a major Federal action affecting the environmental quality, and therefore issued a FONSI on August 14, 1998.

The plutonium metal and dioxide that will be produced during the demonstration will be staged in existing special nuclear material storage facilities at LANL until a decision is made on the ultimate disposition strategy. The resulting plutonium metal and dioxide will be suitable for disposition either using immobilization or for use in MOX fuel. No new storage construction will be required, and there will be no need to increase the storage limits of the existing facilities. The demonstration will result in a small net increase in the amount of surplus plutonium at LANL. DOE intends to ship LANL's total surplus plutonium to the disposition site or sites that are chosen as a part of the ROD for this SPD EIS. These demonstration storage activities are part of the ongoing operations discussed in the *Site-Wide Environmental Impact Statement on the Continued Operation of the Los Alamos National Laboratory* (DOE/EIS-0238, January 1999), which is incorporated by reference in the *Pit Disassembly and Conversion Demonstration EA*.

MD131-13

Pit Disassembly and Conversion

The HYDOX (dry) process described for the pit conversion facility in Section 2.4.1.2 is a process for converting plutonium metal with certain impurities to a plutonium dioxide with a minimum of impurities. In the HYDOX process, the pit hemishells (i.e., nonpit plutonium metal) would be placed

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into the HYDOX module, where the metal would be exposed to and react with hydrogen, then nitrogen, and finally oxygen at controlled temperatures and pressures to produce plutonium dioxide. This is one variation of the basic hydride-dehydride process; another would produce a metal rather than an oxide. The process described in this SPD EIS is not only representative of the proposed process, but is bounding for potential impacts, including accidents. However, a pit disassembly and conversion demonstration aimed at optimizing process operations for the pit conversion facility is under way at LANL. Should evidence from that demonstration or other research invalidate the analyses reflected in this EIS, additional NEPA documentation would be prepared.

MD131-14 Plutonium Polishing and Aqueous Processing

While the SRS FB-Line and associated facilities could be configured to disassemble and declassify pits leaving the plutonium in the metal form, the surplus plutonium disposition program requires that the plutonium metal be converted to oxide for subsequent disposition actions. Therefore, additional processing would be required later to complete the disposition objective. In addition, use of FB-Line for this function would extend its life beyond the timeframe that DOE currently intends to operate this facility.

MD131-15 Pit Disassembly and Conversion

The ability to bring a Government facility on line depends largely on the ability to obtain the required level of congressional funding. Nevertheless, DOE needs to estimate the duration of the construction period in order to assess potential environmental impacts. Based on experience with similar facilities, DOE estimates that it would take 3 years to construct the pit conversion facility. If congressional funding were secured after the ROD was issued, construction could start in 2001, with facility operation beginning in 2004. The 3-year construction period would result in potential impacts more intense than those spread over a longer period.

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.

MD131-16

Alternatives

DOE acknowledges the commentor's concern about the timeframe for the surplus plutonium disposition program. The schedules presented in Appendix E reflect the design, construction, and operation timeframes DOE has proposed for the surplus plutonium disposition facilities. DOE believes that these schedules can be met and has used them to evaluate the potential impacts of its proposed actions. DOE's MOX RFP specified a timetable including first insertion of production, not test, fuel no later than the end of calendar year 2007, and a date of last insertion no later than 2019. This timetable was acceptable to DCS, the team that was selected for this effort. However, because there could be some delays associated with issues such as negotiations with other countries, Section 4.30.2 includes a discussion of incremental impacts of variations in that schedule. As explained in that section, certain impacts (e.g., exposure) would occur only or primarily during processing, and the total impacts would not change even if the processing schedule were extended or shortened. For example, if the operating period of the MOX facility were extended by 1 year, the total dose and LCFs for the worker and the public would remain essentially unchanged, though the annual dose would be expected to decrease. If the facility were not operating, or operating at a lower throughput, the dose rate would be lower. Then the only contributors would be small amounts of internal equipment contamination and material in highly shielded storage, and presumably fewer workers would be at the facility. Total impacts from these internal sources, however, would depend on the period of operations; lengthening operations for 1 year would mean continued impacts at the levels described in Chapter 4 of Volume I for 1 year or longer.

MD131-17

Waste Management

Section 2.4.1.2 of the SPD Draft EIS states that HEU and classified metal shapes would be decontaminated. Waste volumes listed in Chapter 4 of Volume I and Appendix H include wastes generated by the HEU decontamination process.

SPD EIS AND COST REPORT COMMENTS

II. Plutonium Missions/Plutonium Sites/Plutonium Infrastructure

- In the Cost Report (Table ES-2) a number of infrastructure deficiencies at Pantex needed to support the Disposition Programs are identified, including the following:
 1. SNM processing capability
 2. Radioactive waste management capability
 3. A Source Calibration facility (The new Source Calibration facility at SRS cost about \$35M)
 4. A plutonium analytical lab

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These infrastructure improvements would cost hundreds of millions of dollars to construct and operate - in addition, the experience of existing plutonium sites shows that the cost to clean up and remove them at the end of the mission will be even more. It appears that these costs have not been included in the Cost Report. These costs must be developed and considered for a valid cost analysis, including a life cycle cost incorporating ultimate D&D.

- In 1996 DOE decided that Pantex was not suitable for a plutonium mission because "plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current capabilities." (Stockpile Stewardship EIS). The 1996 policy was established during consideration of Pantex (and other sites) as potential locations for a pit manufacturing mission. Pantex was disqualified from consideration on the basis of this policy. Pit manufacturing and pit disassembly and conversion have a number of similarities. Both processes are "dry" and involve handling of both the plutonium and associated pit parts. But compared to pit manufacturing, the Disposition Program function of pit disassembly and conversion involves a much larger quantity of plutonium and produces plutonium oxide rather than the much easier to manage metallic form. If it is too expensive and complex to introduce pit manufacturing into a non-plutonium site, then surely it must be dramatically less desirable to introduce pit disassembly and conversion.

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- DOE explains that its preference for immobilization at SRS "complements existing missions and takes advantage of existing infrastructure and staff expertise". (Page S-9). In the June 23, 1998 MOX announcement, DOE said its preference for MOX at SRS was because this mission "complements existing missions and takes advantage of existing infrastructure and staff expertise", and that Pantex "does not offer a comparable infrastructure including waste management." The plutonium processing required for the pit disassembly and conversion mission is essentially the same as that required for MOX. Pantex cannot be "equally preferred" since there are no existing complementary missions at Pantex, there is no existing infrastructure and staff expertise that can be applied to pit disassembly and conversion, and the Cost Report identifies significant inadequacies in the Pantex infrastructure.

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- DOE is certainly very responsive to some of the public. "During the scoping process, the comment was made that Pantex should be considered for the pit-conversion facility", and three options were added. The EIS claims such comments were screened against three

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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.

MD131-19

Alternatives

The *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (SSM PEIS) (DOE/EIS-0236, September 1996) states that the pit fabrication mission would not be introduced into a site that does not have an existing plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current plutonium capabilities. The SSM PEIS states further that an important element of the site selection strategy is maximizing the use of existing infrastructure and facilities as the nuclear weapons complex becomes smaller and more efficient in the 21st century; thus, no new facilities were to be built to accommodate stockpile management missions. Accordingly, DOE considered as reasonable only those sites with existing infrastructure capable of supporting a pit fabrication mission. Although Pantex has the infrastructure to carry out its current weapons assembly and disassembly mission and a nonintrusive pit reuse program, it was not considered a viable alternative for the pit fabrication mission because it did not possess sufficient capability and infrastructure to meet the SSM PEIS siting assumption stated above. Among the operations that were considered in developing siting alternatives for pit fabrication in the SSM PEIS were plutonium foundry and mechanical processes including casting, shaping, machining, and bonding; a plutonium-processing capability for extracting and purifying plutonium to a reusable form either from pits or residues; and assembly operations involving seal welding and postassembly processing.

When comparing the site selection strategy for pit disassembly and conversion mission with that used for the pit fabrication mission, the siting criteria in the SSM PEIS has little or no bearing on siting criteria use in this SPD EIS. Pit disassembly and conversion do not require the foundry and mechanical

processes discussed in the SSM PEIS and can be accomplished in a stand-alone facility. Also, the SSM PEIS siting assumptions include a requirement to use existing facilities, whereas, the pit conversion facility would be a new structure no matter where it is located.

MD131-20

Alternatives

The initial preference for Pantex and SRS as sites for the pit conversion facility was based on a determination by DOE that the differences in environmental impacts were modest, and thus did not warrant the preference of one site over the other. Existing infrastructure that supported placement of the pit conversion facility at Pantex included security, staff expertise, and the presence of the pits that need to be dismantled. Costs for all required infrastructure were estimated, and even with the additional waste management and infrastructure support needed at Pantex, the cost differences were not considered significant.

As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure.

MD131-21

Alternatives

Pantex was identified as a candidate site for both the pit conversion and MOX facilities in the NOI. The alternatives that were added after the scoping process to include Pantex as a candidate site for pit conversion were associated with the immobilization-only options; Pantex had already been identified as a candidate site for the pit conversion facility for a number of the hybrid alternatives. As discussed in Section 2.3.1, these options were added after DOE confirmed that they met all the screening criteria.

SPD EIS AND COST REPORT COMMENTS

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| <p>criteria, one of which was infrastructure cost. Since Pantex has no plutonium infrastructure, it logically could not pass this screen.</p> | 21 |
| <ul style="list-style-type: none"> For both safety and security reasons, it is important that there be a large buffer zone around plutonium facilities. The fact that the distance to the sight boundary at SRS is at least 5X that existing at Pantex should be a significant discriminator. A plutonium release at Pantex would reach the site boundary before a public evacuation notice could be issued. | 22 |
| <p>III. <i>Program Costs</i></p> | |
| <ul style="list-style-type: none"> The Cost Report says it "does not incorporate possible synergies between co-locating disposition facilities at one site" (page 3.3). This information is required to make a valid decision. | 23 |
| <ul style="list-style-type: none"> The Cost Report shows the answers of MD's analysis of the cost of various options. But since there is no backup/worksheet data publicly available - how is the public supposed to draw any confidence in the veracity and credibility of this analysis. The full analysis needs to be available for review and comment. | 24 |
| <ul style="list-style-type: none"> The Cost Report (page 1-10) says DOE's estimate for the immobilization facility was determined on a square foot basis based on experience with similar projects. What were those similar projects? Most of the large comparable nuclear facilities built in this country in the last 15 years have been built at SRS (e.g., DWPF, NSR, HB-Line, RTF) and all of them were significantly more per square foot (even 10-15 years ago!) than the Cost Report estimates for new facilities (\$450M/108,000 sq. ft. = \$4200). | 25 |
| <ul style="list-style-type: none"> Both the MOX and Immobilization facilities are estimated at about \$4200/sq. ft. The cost per square foot of the pit disassembly and conversion facility is much less, about \$2900 per sq. ft. of hardened space? (\$440M/~150,000 sq. ft. = \$2900). Since the facilities are similar in size and all are plutonium oxide processing facilities it seems logical the cost per square foot would be similar. | 26 |
| <ul style="list-style-type: none"> The construction of a MOX plant is estimated at \$510M for both Pantex and SRS. Yet the Pantex plant is bigger in the EIS, and the Cost Report has identified the major deficiencies in the infrastructure at Pantex which would have to be added to support a MOX operation. The cost of a MOX operation at Pantex must be much higher than at SRS. | 23 |
| <ul style="list-style-type: none"> Some of the construction data is inconsistent. For instance, the MOX plant (120,000 sq. ft.) requires about 50% more construction manpower than the pit disassembly and conversion facility (~150,000 sq. ft.). | 24 |
| <ul style="list-style-type: none"> Penalizing sites other than Pantex with an \$80 million dollar charge for packaging and shipping pits to a pit disassembly facility elsewhere (page 3-4) is not a valid charge. Shipping plutonium oxide from Pantex to SRS for disposition would cost more than shipping | 25 |

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MD131-22

Human Health Risk

Appendixes K.4 and K.5 present the hypothetical maximum accident impacts on a receptor at each site boundary. Although calculations show that most accidents would yield somewhat higher doses to this receptor at Pantex—given the proximity of the boundary to the release location, the meteorology, and other factors—the differences from the perspective of health risk would, in most cases, likely be minor. This assertion is warranted by the cancer risk values stipulated in Tables K-12, K-13, K-14, and K-25.

MD131-23

Cost Report

This comment is addressed in response MD131-18.

MD131-24

Cost Report

This comment is addressed in response MD131-18.

MD131-25

Cost Report

This comment is addressed in response MD131-18.

MD131-26

Cost Report

This comment is addressed in response MD131-18.

SPD EIS AND COST REPORT COMMENTS

- pits. Plutonium oxide requires more shipments, requires a more extensive packaging operation, and uses higher cost shipping and storage containers than shipping pits. 25
- Safeguards and MC&A requirements are significantly different and more complex for handling plutonium in bulk forms rather than the piece counts employed at Pantex. The Cost Report needs to incorporate the cost and schedule impacts of major safeguards and MC&A upgrades at Pantex. 26
- IV. Pit Storage, Transportation, and Safety
- The storage of pits at Pantex is inadequate. The GAO issued a report in April saying worker's health and safety have been placed at risk. The Defense Board says that DOE's efforts to improve storage "appear confused" and lack technical basis. Since the plutonium will have to come to SRS for MOX or immobilization anyway, it makes sense to pack and ship as soon as possible and avoid a large cost to upgrade pit storage. Pit disassembly and conversion at Pantex means surplus pits will remain in inadequate storage for nearly 20 more years. A scenario where pits are retained at Pantex until at least 2015 must include the cost of upgrading pit storage. This cost could easily be more than a hundred million dollars. The EIS should consider alternatives for early shipment of pits to SRS. SRS already has NEPA coverage to transport and store up to 20,000 pits in P-Reactor (Pantex EIS), or could add a module to AFSP for pits. 27
- In the 1997 PEIS Record of Decision DOE said that it would store surplus pits awaiting disposition in upgraded facilities at Zone 12 at Pantex by 2004. There does not appear to be any current significant progress in this effort. DOE needs to acknowledge such, and revise the NEPA coverage of pit storage at Pantex. The SPD EIS does not seem to address the exposure, waste, risk, etc. of packaging and shipping all the surplus pits from their current temporary storage in Zone 4 to these upgraded facilities in Zone 12, then moved back again to a pit disassembly facility located in Zone 4. This information needs to be added to the EIS and compared to early transfer to SRS. 28
- Locating pit disassembly and conversion at Pantex could be viewed from a safety perspective in the following way:
 - DOE is proposing to convert sealed plutonium metallic components into a large quantity of dispersible plutonium oxide - then store it directly in the flight path of the Amarillo airport in a facility near bunkers of high explosives and nuclear warheads.
 - Then DOE must ship a dispersible form of plutonium in quantities far larger than has ever been shipped before.
 The Summary of the EIS should explain the logic of this (Option 5A for instance) from a safety perspective. 29
- The EIS transportation data show a significant transportation safety advantage and essentially no more total shipping by co-locating all three disposition programs at SRS. Since the only explanation given for adding Pantex to the program as a processing site was because the pits were there and that might mean a transportation advantage for this option, there now data to eliminate Pantex, especially since it has no history of plutonium work. 30

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MD131-27

Storage and Disposition PEIS and ROD

DOE acknowledges the commentor's concern regarding the 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.

MD131-28

Storage and Disposition PEIS and ROD

Worker exposure estimates attributable to the decision to repackage 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 determined; e.g., 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.

The remainder of this comment is addressed in response MD131-27.

MD131-29

Human Health Risk

In response to public concerns, a number of actions (see Appendix K.1.5.1) have been taken to reduce the risk of an aircraft crash at Pantex. The frequency

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of a crash into a pit conversion facility vault containing plutonium powder (plutonium dioxide) is less than 1 in 10 million per year. According to conservative calculations (see Table K-12), this "beyond-extremely-unlikely" accident (estimated frequency: lower than 1 in 1 million per year) would induce 4.5 LCFs in the population within 80 km (50 mi) of the site.

The impacts of explosives and the associated release of plutonium powder into the environment have also been evaluated (Appendix K.1.5.2.1). An explosion would be "unlikely" (estimated frequency: 1 in 10,000 to 1 in 100 per year). Conservative calculations (see Table K-12) indicate that this accident would induce only 0.00011 LCF in the population within 80 km (50 mi) of the site. The inadvertent detonation of a nuclear warhead is not considered credible.

Impacts associated with transporting plutonium dioxide from Pantex to offsite facilities are addressed in this SPD EIS; an estimate of the maximum potential impacts of such a shipment is included in Appendix L.6.3. According to conservative calculations, a transportation accident in an urban area would produce 27 LCFs within a radius of 80 km (50 mi) of the accident location. However, given the extremely low frequency of the accident (much lower than 1 in 10 million per year), the actual risk of a fatal cancer is extremely low. A transportation accident in a rural area, the scenario discussed in Section 4.6.2.6, has a frequency of 1 in 10 million per year and a predicted impact of less than 0.1 LCF. The net result is an extremely low risk of a fatal cancer among the population within 80 km (50 mi) of the accident. In summary, conservative evaluations indicate no significant safety concerns to the public from locating the pit conversion facility at Pantex.

MD131-30

Transportation

The selection of sites for potential surplus plutonium disposition facilities was based on a number of factors. The location of the surplus pits at Pantex was not the only reason for making it a reasonable alternative for siting the proposed surplus plutonium disposition facilities. 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 shows the transportation risks for all alternatives. Analyses of transportation risks are just one of the factors considered in the decisionmaking regarding facility siting.

SPD EIS AND COST REPORT COMMENTS

- DOE's EM Division has stated that they expect to save over a billion dollars by accelerating shipment of non-pit plutonium from Hanford and Rocky Flats to SRS for disposition. If it is cost effective for EM to expedite the movement of that plutonium, then it must also be cost effective for DOE to accelerate the shipments of pits from Pantex. Particularly considering the major upgrades required at Pantex for safe storage if the pits are not promptly moved. 31
- V. Waste and Waste Management
- DOE plans to entomb six million cubic feet of TRU waste at WIPP. The pit disassembly and conversion facility will produce less than .1% of this quantity regardless of whether a dry or aqueous process is used. Therefore whether one pit conversion process produces slightly more or less TRU waste than another is irrelevant. The fact that this technology choice impacts 32
 1. Cost and schedule
 2. The size, cost, risk, and environmental impact of downstream processing facilities
 3. The ability to use of existing facilities for aqueous systems versus having to construct new facilities for the proposed dry process

needs to be considered and analyzed in the EIS.
- If all the 50MT's of surplus plutonium were aqueously processed using existing facilities at SRS, fewer than 20 additional glass logs would be produced by DWPF out of an approximate total of 5200 and would represent less than one month out of 25 years of operation of DWPF. This small environmental impact needs to be included as an EIS option, and together with the resulting smaller, simpler MOX and immobilization facilities, considered as a reasonable alternative compared to the all new facilities and technologies currently analyzed. 33
- The EIS says that shipments of TRU waste resulting from a pit disassembly and conversion operation at Pantex cannot be shipped to WIPP until after 2016. The full cost, risk, and facilities for storing the total accumulation of TRU waste during the life of the program until after 2016 needs to be added to the analysis. In addition, the EIS needs to consider the much larger quantity of TRU waste which will be generated by the future D&D of a 186,000 sq. ft. plutonium processing facility at Pantex. 34
- While it is true that solid waste generation under any scenario would be small compared to DOE's existing stocks, certainly it should be worth noting in the summary, p. S-23 for example, that generation of any TRU waste at Pantex is an issue. Pantex has no TRU waste nor authorization to ship TRU waste to WIPP. TRU waste will have to be stored until at least 2016. 35
- What is the logic for not including waste shipments in Table S-3, "Facility Transportation Requirements"? The inclusion of these shipments is part of the plant's operations and the 36

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MD131-31 Storage and Disposition PEIS and ROD

The potential cost saving that could result from the early movement of nonpit surplus plutonium from RFETS and Hanford is based on the termination of storage operations and required security at those sites. Security is a major cost involved with storage. The same situation does not apply to Pantex, which will continue its storage mission and associated security. Further, major upgrades of storage facilities at Pantex are not required, but DOE is considering some upgrades (e.g., air conditioning, catwalks, standby power) to address plutonium storage requirements. Although SRS is preferred for the proposed surplus plutonium disposition facilities, a decision has not been made. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

MD131-32 Waste Management

An aqueous process for conversion of plutonium would need to be placed in a new facility. Existing canyon facilities are not configured for a plutonium disposition mission and are either shut down or planned for shutdown and D&D.

DOE is committed to waste minimization and pollution prevention throughout the complex.

The remainder of this comment is addressed in response MD131-1.

MD131-33 Waste Management

This comment is addressed in response MD131-9.

MD131-34 Waste Management

Section 4.17.2.2 evaluates the potential impacts of operation of the pit conversion and MOX facilities on the waste management infrastructure at Pantex. This section states that the 640 m³ (837 yd³) of TRU waste generated over the 10-year operations period could be stored within the new pit conversion and MOX facilities with minimal impact on existing waste management infrastructure at Pantex. The amount of waste generated by D&D of the facilities would be determined by the future use selected for the buildings and adjacent land areas. As described in Section 4.31, DOE will

evaluate options for D&D or reuse of the proposed facilities at the end of the surplus plutonium disposition program. At that time, DOE will perform engineering evaluations, environmental studies, and further NEPA review to assess the consequences of different courses of action.

MD131-35**Waste Management**

Pantex's lack of TRU waste capacity is discussed in Section S.7 of the *Summary*, which states that because TRU waste is not routinely generated and stored at Pantex, TRU waste storage space would be designated within the pit conversion and MOX facilities. Also, Section S.8 of the *Summary* states that TRU waste storage at Pantex would be provided within the new surplus plutonium disposition facility. In addition, Section 4.17.2.2 assumes that all TRU waste would be stored on the site before being shipped to WIPP for disposal. Although Pantex is not currently authorized to ship TRU waste to WIPP, wastes produced by the proposed surplus plutonium disposition facilities could be accommodated in WIPP. Section 4.17.2.6 includes an analysis of the transport of TRU waste from Pantex to WIPP. This analysis would provide the NEPA documentation for these shipments if this alternative were selected.

MD131-36**Waste Management**

DOE acknowledges the commentor's concerns regarding transportation of wastes generated by the proposed surplus plutonium disposition facilities. The impacts of waste transportation are analyzed in detail in 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). As described in Appendix L.6.4 of this SPD EIS, waste transportation at the sites would be handled in the same manner as current waste shipments, and would generally not constitute a major increase in the amounts or risks of waste currently being generated at these sites and analyzed in the WM PEIS. Therefore, this small increment of shipments is not analyzed in this SPD EIS. However, wastes could be generated by surplus plutonium disposition activities that are not covered in the WM PEIS: (1) TRU waste generated at Pantex; (2) some of the LLW generated at Pantex; and (3) some of the LLW generated by lead assembly fabrication at LLNL. Shipment of Pantex TRU waste to WIPP, and Pantex and LLNL LLW to NTS disposal facilities are analyzed in this SPD EIS with the

SPD EIS AND COST REPORT COMMENTS

impact will vary by scenario chosen. They should be included here for impact and not segregated since that tends to confuse. 36

VI. EIS Data Inconsistencies

- The radiation exposure to construction workers at Pantex reported as zero, but section 3.4.4.1.2 reports that annual doses of 100 mrem above background are measured in zone 4, the site of the proposed facilities. This needs to be corrected to show the exposure to construction workers. 37

- The TRU waste volume forecasts do not appear to be accurate. The annual TRU waste volume for pit disassembly and conversion, a very large facility handling 33MT of plutonium oxide is much less than the TRU waste forecasted from the much smaller MOX and immobilization facilities which handle equal or less plutonium. I cannot understand this difference - what is the basis for the forecasts and how do they compare to real data from an operating plutonium processing facility like SRS's FB Line or Hanford's PFP? 38

VII. Lead Test Assemblies

- SRS is the preferred site for MOX and should also be the preferred site for the MOX Lead Test Assembly work. The same plutonium capability and expertise is required for both programs. Given the high costs associated with establishing and maintaining plutonium sites, and, given that the only potential for future plutonium operations that are even being considered are at SRS or Pantex, DOE should not consider supporting plutonium infrastructure at INEL, LLNL, Hanford or ANL-W for the Lead Test program. The report evaluating all five sites showed that the physical plant SRS is offering is as good as any other option. Surely DOE would not maintain another plutonium site for several years just to support a small test program. 39

- The EIS needs to examine the impact of a larger test assembly program. Typical fuel demo programs in the commercial LEO world would require more. The fuel vendor and utility teams have not yet spoken. And, the NRC has yet to review any license applications. 40

- SRS's HB-Line will be producing purified plutonium oxide for safe storage during the time this kind of material will be needed for the Lead Test Assembly Program. Since HB-Line is immediately adjacent and connected to the facility to be used for the LTA's, this would be a logical source of plutonium feed. The EIS should evaluate this option and consider the reduced environmental and safety impacts of using this immediately available pu feedstock. 41

R. L. Geddes

MD131

results presented in Chapter 4 of Volume I and Appendix L. Transportation requirements for these wastes are not included in Table S-2 since this table provides generic transportation requirements applicable to the listed facilities regardless of site location.

MD131-37

Human Health Risk

As stated in Section 3.4.4.1.2, the 100-mrem dose is the dose measured at an offsite control location. It is the dose strictly associated with the natural background levels of the area; no part of the dose is attributable to above-background sources. Therefore, there is no discrepancy in the assertion of a zero dose (i.e., the dose level above background) for Pantex construction workers. A statement was added to applicable Chapter 3 (Volume I) sections to further clarify this issue.

MD131-38

Waste Management

The pit conversion facility would convert relatively clean plutonium metal pits to clean plutonium dioxide. In contrast, both the immobilization and MOX facilities mix the plutonium with other materials, increasing the material flow through the facility by a factor of 10 to 20. Additionally, the immobilization facility would handle plutonium in various forms, including fuel rods and plates, impure oxides, and impure metals and alloys. Each form of plutonium requires different processing techniques; some would require significantly more handling than pits require in the pit conversion facility and therefore would generate more TRU waste. Likewise, many steps are needed to fabricate the clean plutonium dioxide into fuel assemblies in the MOX facility. Because the immobilization and MOX approaches are more complicated and process a considerably larger total material throughput, it is estimated that more TRU waste would be produced by the immobilization and MOX facilities than the pit conversion facility.

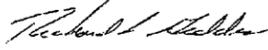
MD131-39

Lead Assemblies

DOE acknowledges the commenter's support for the fabrication of lead assemblies at SRS. 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

SPD EIS AND COST REPORT COMMENTS

Thank you for your careful consideration of my comments. I am looking forward to seeing them addressed in the Final EIS and a revised Cost Report.



Richard L. Geddes
 807 Big Pine Road
 North Augusta, SC 29841

cc: Ms. Carol Borgstrom, Director
 Office of NEPA Policy and Assistance
 Office of Environment, Safety and Health

U. S. Department of Energy
 1000 Independence Avenue
 Washington, DC 20585

R. L. Geddes

9

MD131

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.

MD131-40

Lead Assemblies

The lead assembly program, including determination of the number of lead assemblies for test irradiation, was the product of close consultation with representatives of the commercial nuclear industry. Since publication of the SPD Draft EIS, the number of lead assemblies has in fact been reduced to two on the basis of information provided by DCS. DCS indicated in its proposal that two lead assemblies should be sufficient for its fuel qualification plan, although it is possible that more than two would be required. The potential impacts of fabricating 10 lead assemblies and irradiating 8 of them were analyzed in the SPD Draft EIS. Should fewer lead assemblies than analyzed be fabricated or irradiated, the potential impacts would be less than those described in this SPD EIS. This SPD EIS analyzes the potential impacts of the fabrication of the lead assemblies. Domestic, commercial reactors operate under NRC license; therefore, the use of MOX fuel lead assemblies would be subject to review and regulation by NRC.

MD131-41

Lead Assemblies

The purpose of the lead assembly project is to qualify fuel for the MOX approach to surplus plutonium disposition. In this SPD EIS, it is assumed that the plutonium would come from dismantled pits or existing supplies of surplus metal and oxide at LANL.

CLAUDE L. GILBERT, JR.
1304 Candlewood Drive
Hopkins, South Carolina 29061

September 14, 1998

Department of Energy
Office of Fissile Materials Disposition
Howard R. Canter

Dear Mr. Canter,

Throughout the administrations of Presidents Ford, Carter, Reagan, and Bush, the policy of the United States banned the use of plutonium in commercial nuclear power plants due to the risk that the plutonium could be diverted to terrorists and to nations that have not renounced the use of nuclear weapons.

I hope you will reconsider the dangerous, expensive and an irresponsible course you have endorsed that will convert warhead plutonium into civilian nuclear reactor (MOX) fuel. The use of MOX in the U.S. sends precisely the wrong message in the effort to end nuclear proliferation. As you know, MOX equals plutonium, one of the most toxic, carcinogenic, radioactive substances in the world. This means that the federal government will be transporting plutonium into neighborhoods in order to prop up and subsidize a failing nuclear power industry. You also realize that the production of mixed oxide fuel will result in enormous new quantities of radioactive and chemical wastes that will present significant additional disposal problems and unknown costs. The Department of Energy should be developing plutonium immobilization technologies not endangering the public as well as draining our assets to promote a failed foreign business.

Companies such as BNFL and Cogema cannot be trusted to handle US plutonium disposition. BNFL, besides being responsible for the radioactive North Sea, is a key partner in Urenco, a uranium enrichment consortium. It was top-secret Urenco uranium enrichment technology that formed the basis of Iraq's clandestine efforts to attain nuclear weapons capability. This is not the kind of company that should be handling the most sensitive nuclear material in the United States. There are no reactors in England interested in MOX fuel.

Cogema is undergoing severe criticism and scrutiny in France, where it was revealed in the Spring of 1997 that the area near its La Hague reprocessing plant is highly radioactively-polluted and has caused excess childhood cancers. Continued radiation monitoring in the area has found continued high radiation levels, and local beaches were closed during the summer season.

Here in South Carolina, we already have massive environmental problems from the Savannah River Site. Our ground water is contaminated, the food chain has been contaminated (radioactive fish, turtles and four legged owls). DuPont and Westinghouse both had visions of grandeur and failed miserably in the nuclear waste department, leaving a massive cleanup bill for the taxpayer. Duke power wants to experiment with MOX and have the taxpayer subsidize them and then pay higher rates for electricity in a time when deregulation and energy efficiency makes nuclear power the most expensive fuel there is. Mixing plutonium with taxpayers money is not a sound business decision., the people and the environment deserve better- do the right thing, STOP MOX.

Thank you
Claude Gilbert, Jr.
Claude Gilbert, Jr.

MD184

MD184-1

MOX Approach

DOE acknowledges the commentator's opposition to the MOX approach. 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.

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. In keeping 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 U.S. surplus plutonium, and the MOX facility would be shut down at the completion of the surplus plutonium disposition program. In addition, the MOX facility would be open to international inspections.

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

Comment Documents and Responses—South Carolina

fatality or release of radioactive material. The transportation requirements for the surplus plutonium disposition program are also evaluated in this SPD EIS. Transportation impacts of the MOX approach are summarized in Chapter 4 of Volume I and Appendix L.

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.

MD184-2**Other**

DOE acknowledges the commentor's concerns.

MD184-3**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.

Surplus Plutonium Disposition Draft EIS Public Comment

Charles R. Goergen
510 Boardman Road
Aiken, South Carolina 29803

With 23 years of nuclear experience in working with all isotopic classes of plutonium, my areas of expertise include plutonium chemistry, chemical separations processing, and radioanalytical techniques. In 1994 while on loan to DOE-HQ, Office of Nuclear Weapons, I served on the Plutonium ES&H Vulnerability Assessment participating in the Pantex Working Group Assessment Team as the plutonium technology/process safety expert where I spent a total of one month at the Pantex Site. As a result of that experience I have serious concerns for Pantex being the Site chosen for the Surplus Plutonium Disposition pit conversion mission.

That vulnerability assessment took a time slice for current missions. In 1994 direct work with unclad plutonium was not included. All plutonium was encased in sources or pits with the exception of some lab reference solutions. There have only been a few occasions where Pantex has had plutonium exposed to air. In the most recent case, the design agency was called in to actually autopsy the pit and deal with the resultant materials.

During my experience at Pantex I made the following observations:

- There was no workforce experience base of unclad plutonium handling operations. Operations, maintenance, Radcon, and engineering need to be familiar and knowledgeable of possible hazards. Precautions centered on maintaining the integrity of the cladding with emergency responses to reestablish containment. There was no experience with releases of plutonium. Technical assistance by the design labs was available but not easily accessed.
- Personnel knowledge of the properties of plutonium focused on penetrating radiation exposure. Appreciation for the form was lacking, for example: α or δ phase metal, particle size distribution of oxide, nitrate or hydroxide solutions, Pu-238 or Pu-239 isotopic distribution. Intimate knowledge of plutonium characteristics and familiarity of operations is vital to success of this defined endeavor.
- Nuclear Criticality had been analyzed to be incredible for pit systems at Pantex. As soon as the pit is deformed and converted to another geometry, the criticality implications, analyses, controls, alarms, emergency response procedures and facilities must then be addressed. This would involve an extensive control system.
- Radiological contamination controls need to deal with potential contamination levels of millions of dpm alpha. Techniques to work with and handle this level of radioactivity, measurement, and decontamination methodology are learned through experience. Anti-contamination techniques such as radiological clothing/personal protective equipment need to have been mastered. Ventilation systems require

SCD05

SCD05-1

Alternatives

DOE acknowledges the commentator's opposition to siting the pit conversion facility at Pantex. Experienced workers would be used, and specific training would be provided to all workers involved in the surplus plutonium disposition program. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

maintenance programs for HEPA filters, fans, and ductwork. Handling of ancillary materials such as tools, transuranic waste, low level waste, and laundry are not inconsequential tasks.

- Shielding will need to be added for (α, n) reactions to be encountered and the Am-241 in aged plutonium.
- Use of containments such as work in gloveboxes is difficult and requires extensive practice and experience to gain proficiency.

I urge the Department to give weighted consideration to the experience of the workforce in plutonium handling. This goes for design input/review, facility operability, and knowledge. This is not something that can be learned easily from a book but requires familiarity with the potential hazards of the actinides to be encountered. In day-to-day operations there will be difficulties that require immediate technical engineering input and observation. Currently, design agencies provide long distance support.

While the Pantex Site has done an outstanding job in their mission of weapons assembly/disassembly and storage and handling of high explosives, it remains what a DOE official once called it, "a screw and glue factory". Design, construction, and operation of plutonium handling facilities are a different type of work requiring an experience base that is lacking at Pantex.



SCD05



United States
Department
of Energy

Comment Form

NAME: (Optional) Rudy Goetzman
ADDRESS: 19 Inverness East Aiken, SC
TELEPHONE: (803) 649-2349
E-MAIL:

All three elements of the Pu disposition program should be located at SRS. Consolidation of the mission makes both technical and business sense. SRS has the trained personnel and the infrastructure to do all the activities in the disposition program. Pantex has never handled Pu solutions. It is essential that experienced operators and managers are involved with each of the proposed processes to ensure the safety of the workers and the public.

The cost to develop the infrastructure, train the personnel, and "move up the learning curve" of Pu operations have to be significant for Pantex - some estimates are over \$1 billion. From a pure economics standpoint, SRS represents a much better choice.

1

SCD91

SCD91-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure.

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 at SRS 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.



**United States
Department
of Energy**

Comment Form

NAME (Optional) James Goldman
 ADDRESS: 689 Lockwood Dr
 TELEPHONE: (903) 278-2970
 E-MAIL: goldmanj@bellsouth.net

I support bringing all Surplus Plutonium Disposition mission
to the Savannah River Site where the mission will
be completed cheaply & safely, and

SCD65

SCD65-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

1

I am Chuck Smith and I am here on behalf of the Greater North Augusta Chamber of Commerce. I live in North Augusta as do many people that are touched by the Savannah River Site on a daily basis.

The people at SRS and the CSRA contributed to our Nation's nuclear deterrent efforts for over four decades and now these same people are prepared to take on the new, critical mission of plutonium disposition. Why would DOE consider another possible site for this mission? SRS has the experience, infrastructure, the best safety numbers of the entire DOE complex and can accomplish the pit disassembly mission at a lower cost to taxpayers. DOE has previously acknowledged that SRS is uniquely qualified to handle plutonium when it named SRS as the site of choice for the Mixed Oxide Fuel Fabrication.

I believe that these hearings will provide overwhelming arguments as to why DOE will decide that SRS is the preferred site for the Pit Disassembly Mission.

On behalf of the North Augusta Chamber of Commerce, I appreciate the opportunity to express our support for DOE to place this mission at the Savannah River Site.

1

SCD59

SCD59-1

Alternatives

DOE acknowledges the commentor's support for siting the pit conversion facility at SRS. As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPDEIS ROD.



RESOLUTION

WHEREAS the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

WHEREAS plutonium disposition represents one of the most certain future missions of the DOE for the next 20 to 30 years; and

WHEREAS the Department of Energy has decided to pursue a dual path for plutonium disposition and has named the Savannah River Site as a candidate site for both options; and

WHEREAS the Savannah River Site has produced approximately 40 percent of all US weapons grade plutonium over the last 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public or the environment; and

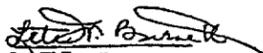
WHEREAS the Department of Energy in its Record of Decision recognizes the Savannah River Site as "a plutonium-competent site with the most modern, state-of-the-art storage and processing facilities...with the only remaining large-scale chemical separation and processing capability in the DOE complex"; and

WHEREAS the regional community in the Central Savannah River Area (CSRA) of South Carolina and Georgia strongly supports continued plutonium missions for the Department of Energy's Savannah River Site;

NOW BE IT RESOLVED that the Greater North Augusta Chamber of Commerce strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.

APPROVED this 26th day of February 1997 at North Augusta, South Carolina, by the Greater North Augusta Chamber of Commerce Board of Directors.


Chuck Smith
Chairman


Les W. Burnett
Executive Director

1

SCD99-1

Alternatives

DOE acknowledges the commentors' support for siting the surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

8-31-98

Laura Holgate
Under Sec'y
Office of Fissile Materials
Department of Energy
Washington, D.C.

Ms. Holgate

As a concerned citizen of the state of South Carolina, I am writing to voice opposition to the Department of Energy's plan to manufacture mixed oxide fuel (MOX) at the Savannah River Site (SRS) or elsewhere.

I strongly agree that we must safeguard plutonium from terrorists and others who may wish to build atomic weapons. Also, we, as a country, must find and agree upon a means of the storage/disposal of plutonium which safeguards the environment and the people in it as well.

MD244

MD244-1

Alternatives

DOE acknowledges the commentor's opposition to the MOX approach. However, 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.

The DOE disposition facilities proposed in this SPD EIS would be 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 SRS facilities would be implemented commensurate with the usability of the material in a nuclear weapon or improvised nuclear device. SRS has sitewide security services. 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.

MOX is not a viable choice²
for the safe containment
of plutonium. This is
because every reactor,
commercial or other, produces
plutonium as a waste
product of its operation.
When the combined uranium,
plutonium MOX fuel is used
in a normal reactor (as opposed
to a weakened one), the amount
of plutonium that comes out
of the reactor, according to
the Westinghouse Corporation,
is only 1% less than the
amount of plutonium that
went into the reactor.

Plutonium is one of the most
toxic, carcinogenic radioactive
substances in the world. It
stays in the environment
and is a health hazard
for 240,000 years! We must find
a safe and alternate method
for its immobilization; a
method which does not threaten
the health of millions of people.
There are too many risks

MD244

MD244-2**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. The purpose of the MOX approach is to convert surplus plutonium to a form that meets the Spent Fuel Standard, thereby providing evidence of irreversible disarmament and establishing a model for proliferation resistance. 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. 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.

MD244-3**Immobilization**

In the *Immobilization Technology Down-Selection Radiation Barrier Approach* (UCRL-ID-127320, May 1997), LLNL recommended that DOE pursue only the can-in-canister immobilization approach based upon its superiority to the homogenous approaches in terms of timeliness, higher technical viability, lower costs, and to a lesser extent, lower environmental and health risks. Based on further recommendations from a committee of experts representing DOE, the national laboratories, and outside reviewers, DOE subsequently determined that immobilizing surplus plutonium materials would be best accomplished using the ceramic can-in-canister approach. NAS is currently conducting studies to confirm the ability of the ceramic can-in-canister immobilization approach to meet the Spent Fuel Standard. The immobilization process is further discussed in Section 2.4.2.2.2.

MD244-4**Transportation**

As indicated in Section 2.18, no traffic fatalities from nonradiological accidents or LCFs from radiological exposures or vehicle emissions are expected. Transportation would be required for both the immobilization and MOX approaches to surplus plutonium disposition. Transportation of special

3
 associated with the proposed
 production and use of Mixed
 Oxide Fuel. One such risk is
 that the plutonium, now being
 guarded in Texas, will be
 more vulnerable to theft by
 terrorists or accidental spills
 while being transported
 by trucks and rail cars.
 Also, there are increased health
 risks inherent with the use
 of radioactive materials such
 as increased rates of cancer,
 leukemia, and thyroid problems
 that result from environmental
 degradation and contamination.
 The people have a right
 to be a part of this important
 decision! Extensive discussion
 of the alternatives for plutonium
 containment needs to happen
 before the DOE begins a
 project that will detrimentally
 affect millions for life.

4
 5
 6

Yours truly,
 Karen G. Hardison
 Karen G. Hardison

MD244

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, and no material has been diverted by terrorists. Section 2.4.4 and Appendix L describe DOE's transportation and material protection activities.

MD244-5

Human Health Risk

This SPD EIS identifies and analyzes potential human health impacts that might result from construction and operation of the 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 of 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. DOE considers the protection of the public against accidents in the design, location, construction, and operation of its facilities.

MD244-6

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. Hearings on this SPD EIS were held in Washington, Texas, South Carolina, Oregon, Idaho, and Washington, D.C. 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.

Comment Documents and Responses—South Carolina

I wanted to register an opinion. My name is Lois Helms. I live in Winnsboro, South Carolina. I'm opposed to the plans for a MOX plant at the Savannah River Site. I think it's a hazardous program and has many shortcomings and is being rushed through without efficiency.

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PD043

PD043-1

Alternatives

DOE acknowledges the commentator's opposition to siting the MOX facility at SRS. This SPD EIS analyzes the potential environmental impacts associated with implementing the proposed surplus plutonium disposition activities at the candidate sites. The results of these analyses, presented in Chapter 4 of Volume I and summarized in Section 2.18, demonstrate that the activities would not have major impacts at any of those sites including SRS.

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. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



United States
Department
of Energy

Comment Form

NAME: (Optional) STEPHEN A. JOHNSON
ADDRESS: 213 CINDY LANE DRIVE ALEXANDRIA, SC 29803
TELEPHONE: (803) 643-0623
E-MAIL: stephenjohnson@southcape.net

If you exclude political pandering, SRS
is the only possible choice for the
consolidation of all Plutonium disposition
missions.

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SCD63

SCD63-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



United States
Department
of Energy

Comment Form

NAME: (Optional) JIM JORDAL
ADDRESS: _____
TELEPHONE: () _____
E-MAIL: _____

SIMPLY STATED — IT MAKES A WHOLE
LOT MORE SENSE TO HAVE PLUTONIUM
DISPOSITION AT THE SRS (IMMOBILIZATION AND
MOX) THAN TO DO ONE OF THE TWO AT
PINNACLE AND RISK TRANSPORT OF RADIOLUCIDITY
ACROSS THE SOUTHWEST FOR MOX AT SRS.

1

CONSIDER THE FACTS, NOT RHETORIC
; NOT POLITICS
; NOT LOBBIES

USE GOOD AMERICAN
COMMON SENSE.

SCD57

SCD57-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

League of Women Voters of South Carolina
 P.O. Box 8453
 Columbia, SC 29202
 (803) 499-1112

Date: September 11, 1998

To: U.S. Dept. of Energy
 Office of Waste Materials Disposition
 P.O. Box 23796
 Washington, D.C. 20036-3796

From: Mary T. Kelly, Ph.D., Natural Resources Specialist, LWVSC
 4018 Sandwood Drive, Columbia, SC 29206
 (803) 782-8410

Re: Surplus Plutonium Disposition Draft EIS

The League of Women Voters of South Carolina has been following Savannah River Site activities, its various missions, and its environmental problems for some twenty-five years. We agree that solutions must be found for eliminating the risk posed by surplus plutonium. We appreciate the opportunity to make these comments.

We commended DOE for holding hearings on the Surplus Plutonium Disposition Draft EIS in various parts of the country. However, the hearing on the afternoon of August 13, 1998 in M. Augusta, SC, made a mockery of the public participation process. It was supposed to be informational with time for discussion groups. Instead it was a highly organized and structured lobbying effort on the part of the energy supporters in the room who view all proposals as one big job/economic development opportunity for the Atlanta/Maconville/Augusta, Georgia area. I believe that the main objective, Westinghouse, is also part of the lobbying effort. One is reminded of President Eisenhower's reaction about the military/industrial complex.

Speakers changed after every speaker. It was intimidating for many with reservations about the proposals and not an atmosphere for stating valid objections counter to the trend of the 400-member crowd. The few who did speak at the end and should be commended for their courage. One speaker questioned why anyone not from the area should care. The fact that many millions of taxpayer dollars are at stake and that we all share in the risk SRS poses did not seem to occur to him.

We heard numerous references to the EIS safety record. One that belongs not to the current contractor, Westinghouse, but to the previous contractor, DuPont. Westinghouse in fact has little or no production record at this site, and there is some doubt as to whether Westinghouse will be the contractor when the proposed facilities are built and operated. And does the large pool of experienced workers no longer mentioned exist? Many are too old and others have departed away from the site. There has been no production since 1998 when the last plutonium-producing reactor was shut down for safety reasons.

The fact that nuclear technology is very, very dangerous seems to have escaped the majority of speakers. A nuclear accident has the potential of contaminating a small state area. We live in a dangerous world. On the one hand, the proposals being offered are intended to keep these materials out of the hands of terrorists. On the other, we seem willing to consolidate almost all of the nation's fissile materials in one place, making South Carolina and the SRS site perhaps the world's prime hot spot target for a terrorist military attack. Is it really smart to concentrate so much at one site?

To comment on the exact proposals:

"How will the burning of MOX in commercial reactors affect foreign policy and our non-proliferation stance? Turning the excess plutonium and highly enriched uranium into fuel for commercial reactors is in contradiction with our carefully thought-out strategy of many years standing - do not use military and civilian nuclear efforts. We have maintained this position through thick and thin. It was the

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MD169

MD169-1 General SPD EIS and NEPA Process

DOE acknowledges the commentator's concerns about the public hearings for discussion of the surplus plutonium disposition program. DOE believes that the hearing in question was objective and open; everyone who attended was provided an opportunity to comment orally or in writing. Moreover, all comments submitted were given equal consideration relative to the preparation of this SPD EIS.

MD169-2 Other

The management and operations contractor for SRS is required to operate the site in compliance with applicable laws and regulations, including DOE environmental, safety, and health directives. If DOE implements alternatives for the disposition of surplus plutonium that result in the construction and operation of facilities at SRS, compliance with applicable laws and regulations would apply to the management and operations contractor regardless of the contractor's previous experience.

As discussed in Section 3.5, operational reactors at SRS have been shut down. Active missions at the site are summarized in Table 3-38. Workers in safety-sensitive positions at SRS must satisfy DOE's qualifications for such positions. As discussed throughout Chapter 4 of Volume I, implementation of alternatives that would result in construction of new facilities at SRS would have no major impact on the regional workforce.

MD169-3 DOE Policy

The scope of this SPD EIS has focused on analysis of alternatives on weapons-usable plutonium that has been declared surplus to national security needs. It does not address non-surplus plutonium (e.g., strategic reserves) or other fissile materials such as HEU, which would continue to be stored at sites other than SRS. Therefore, all material would not be concentrated at SRS.

The Facility Accidents sections in Chapter 4 of Volume I summarize accident analyses for SRS. Details are provided in Appendix K.

3-611

Comment Documents and Responses—South Carolina

The proposed DOE surplus plutonium disposition facilities 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 SRS facilities would be implemented commensurate with the usability of the material in a nuclear weapon or improvised nuclear device. SRS has sitewide security services. 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. Decisions on the surplus plutonium disposition program at SRS will be based on environmental analyses, technical cost reports, national policy and nonproliferation considerations, and public input.

MD169-4

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. 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

justification in the interim for peace days for allowing American companies, including Westinghouse, to sell nuclear technology abroad.

We have criticized other countries for using commercial reactors to produce weapons grade material. Witness our condemnation of Pakistan and India for their bomb making activities.

"Will commercial reactors really be available to meet this need? The nation's commercial reactors are aging and in the process of being shut down. We are now hearing that the forty-year license period was chosen to coincide with the terms of the financing loan. However, the cost of the reactor is that these aging reactors are becoming increasingly uneconomical and very expensive to operate. Essential parts are highly irradiated to be safe to operate or to approach to replace. Given the past difficulties in restarting reactors at SRS, this problem shouldn't be minimized.

"Will the public accept the use of this type of fuel in commercial reactors located relatively close to populated populations?"

"If a commercial reactor is chosen and introduced to burn MOX what will be the licensing process? Will it be similar to that now used to license commercial plants? Who will regulate?"

"What will be the nature of the waste and how will it be handled if the permanent repository is not ready? This is a big problem for commercial reactors now.

"With the existing deregulation, state and stock holders are being faced with the problem of stranded costs for commercial reactors, greatly argued debt. This is very high for nuclear utilities and will not be recoverable through regulated rates. Some equity - the federal government, each state, taxpayers, stockholders - will have to assume this burden. How will this be done? Or will the federal government assume the obligation?"

We continue to be concerned about how new initiatives at SRS will affect the environmental clean up now going on and still the front complete, especially as the new initiatives will produce additional waste. Although we are strong advocates of objective decision making we have to have a degree of skepticism towards any and all planning, based on the lack of stability in the political leadership at the highest levels of DOE, and the arbitrary changes that Congress may make. We have seen three different DOE Secretaries in the last few years. Nevertheless, we wish you well as you make these decisions, so important for the peace of the world.

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MD169

would be a once-through cycle with no reprocessing. The decision on disposition of surplus HEU calls for blending down this material to LEU that is suitable for reactor use. Therefore, this uranium fuel for commercial reactors would no longer be weapons grade and would be the same as other commercial uranium fuel.

MD169-5

MOX Approach

DOE acknowledges the commentor's concerns regarding the use of MOX fuel in commercial reactors. 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. 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. The SRS reactors are much older and predate most of the regulatory requirements to which commercial reactors are designed.

MD169-6

NRC Licensing

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 in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

MD169-7

NRC Licensing

The regulatory process will be the same as for any request to amend a 10 CFR 50 operating license. The reactor licensee will initiate the process by submitting an amendment request to NRC in accordance with 10 CFR 50.90. Safety and environmental analyses commensurate with the level of potential impact are submitted in support of, and as part of, the amendment request. NRC reviews the submitted information and denies or approves the request. The review process may involve submittal of additional information and face-to-face meetings between the licensee and NRC, and may result in modified license amendment requests. NRC would continue to regulate the commercial reactors.

MD169-8

Waste Management

The characteristics of MOX spent fuel would be similar to those of LEU spent fuel. 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. The additional spent fuel assemblies from the use of MOX fuel would not require different spent fuel storage at the reactor sites. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic repository. This SPD EIS assumes, for the purposes of analysis, that Yucca Mountain, Nevada, would be the final disposal site for all immobilized plutonium and MOX spent fuel. As directed by the U.S. Congress through the NWPAs, as amended, Yucca Mountain is the only candidate site currently being characterized as a potential geologic repository for HLW and spent fuel. DOE has prepared a separate EIS, *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), which analyzes the environmental impacts from construction, operation and monitoring, related transportation, and eventual closure of a potential geologic repository.

MD169-9

Cost

DOE would not assume any obligation for stranded costs under the alternatives for the surplus plutonium disposition program.

MD169-10

DOE Policy

DOE acknowledges the commentor's concern that environmental cleanup at SRS would be affected by new initiatives, especially those that would produce additional waste, DOE's changing leadership, and changes imposed by the U.S. Congress. Cleanup at SRS is still a priority, will remain a priority, and can coexist with other DOE initiatives. The surplus plutonium disposition program would be conducted in a way which ensures that cleanup remains a priority at SRS and that the production of any additional waste is processed and disposed of in a timely and environmentally acceptable manner.

RESOLUTION

WHEREAS the handling and disposition of excess weapons plutonium is of grave concern to the national security of the United States; and

WHEREAS plutonium disposition represents one of the most certain future missions of the Department of Energy (DOE) for the next 20 to 30 years; and

WHEREAS the DOE has decided to pursue a dual path for plutonium disposition and has named the Savannah River Site as a candidate site for both options; and

WHEREAS the DOE's Surplus Fissile Materials Disposition Program will result in the production of qualified disposal forms and the eventual removal of these materials from the State of South Carolina; and

WHEREAS the Savannah River Site has produced approximately 40 percent of all U.S. weapons grade plutonium over the last 45 years and has safely handled plutonium in glovebox processing equipment with no adverse impact on workers, the public or the environment; and

WHEREAS the DOE in its Record of Decision recognizes the Savannah River Site as "a plutonium competent site with the most modern, state-of-the-art storage and processing facilities... with the only remaining large-scale chemical separation and processing capability in the DOE complex"; and

WHEREAS the regional community in the Central Savannah River Area (CSRA) of South Carolina and Georgia strongly supports continued plutonium missions for the DOE Savannah River Site;

NOW BE IT RESOLVED that the Lower Savannah Private Industry Council (LSPIC), representing the six Lower Savannah counties of Aiken, Allendale, Bamberg, Barnwell, Calhoun, and Orangeburg, strongly endorses major plutonium missions for the Savannah River Site and urges the Department of Energy to designate the Savannah River Site as its lead facility in plutonium management and disposition.

APPROVED this 8th day of APRIL, 1997 at Aiken
South Carolina, by the LOWER SAVANNAH P.I.C.

Leo Cardin

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SCD101

SCD101-1

Alternatives

DOE acknowledges the commentator's support for siting the proposed surplus plutonium disposition facilities at SRS. As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.



United States
Department
of Energy

Comment Form

NAME (Optional) ... William H. Martin
ADDRESS: 6 Brookland Dr. Aiken, SC
TELEPHONE: (803) 848-0891 (H) (803) 857-7280 (W)
E-MAIL: WHMART@SC.ESCAPE.COM

1. IS THIS A POLITICAL OR TECHNICAL AND ECONOMIC DECISION?
2. RECOGNITION MUST BE GIVEN TO POLITICAL AND ECONOMIC IMPACTS; BUT FOR THE TAXPAYER, THE DECISION MUST BE MADE ON A HIGHLY PLANNED AND COHERENT DECISION MADE.
3. I CONCUR WITH THE GENTLEMAN WHO MADE THE STATEMENT THAT THE DOE MUST LOOK AT THE LONG RANGE AND MAKE FORWARD ^{LOOKING} INSTEAD OF LOOKING AT THE SHORT TERM POLITICAL CONCERNS AND PREJUDICES OF ONE PARTY.
4. I QUESTION THE MOTIVES OF SOME OF THE DOE MANAGERS WHO WISH TO WAGER ON LOOKING AT THE IMMEDIATE WORLD AND NOT AT THE POLITICAL WORLD SUCH A SHORT RANGE OF VISION AND NOT PAYING ATTENTION TO THE TECHNICAL AND ECONOMIC ASPECTS THAT WOULD CALL FOR DIFFERENT DECISIONS.

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SCD67

SCD67-1

DOE Policy

As indicated in the revised Section 1.6, SRS is preferred for the proposed facilities because the site has extensive experience with plutonium processing, and these facilities complement existing missions and take advantage of existing infrastructure. 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.

3-617

Comment Documents and Responses—South Carolina

1998-009683 Aug 20 P 4:32

Dear Federico Pena,

From what i've come to understand about MOX (the plutonium uranium fuel blend for commercial reactors. It is not an option! Stop propping up uneconomical reactors that can't make ends meet. Particularly with my tax dollars! It is an insult to injury. There is no truly safe option, but there are safer options. Go for them! and stop this insanity!

Thank you

Sincerely,
Corry E Mason

FD205

FD205-1

MOX Approach

DOE acknowledges the commentator's opposition to the 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.



United States
Department
of Energy

Comment Form

NAME: (Optional) R. S. MATTHEWS
ADDRESS: 152 DUPREE PL, AIKEN, SC. 29801
TELEPHONE: (806) 642 7145
E-MAIL: N/A

The single copy of the cost report
on the back table has a table (ES-2) indicating
a number of deficiencies in Pantex infrastructure.

How much was into the cost study for:
(a) building a plutonium analytical lab at
Pantex
(b) providing for waste disposal (from the plutonium
operation) at Pantex
(c) building a Source Calibration Facility at
Pantex (Savannah River's cost was about 35 million)
(d) creating an a Special Nuclear Materials
handling capability at Pantex
(e) how much for detailed, start-from-zero
training for plutonium handling (as
opposed to sealed pits)

Please provide detailed answers to
each part of this question and
consider modifying and reissuing the
cost report.

R. Matthews
8/13/98

SCD96

SCD96-1

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.



United States
Department
of Energy

Comment Form

NAME: (Optional) R. S. MATTHEWS
ADDRESS: 152 DUPREE PLACE AIKEN, S.C. 29801
TELEPHONE: (252) 6427145
E-MAIL: N/A

The "Nuclear Weapons and Material Monitor"
said the EIS had an "Appendix B"
which evaluated aqueous processing for
pit conversion (it concluded that it
could be done faster and it used
proven technology. Where is this
alternative in the EIS? I couldn't
find it!

2

R. Matthews
8/15/98

SCD96

SCD96-2 Plutonium Polishing and Aqueous Processing

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 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.



United States
Department
of Energy

Comment Form

August 13, 1998

NAME: (Optional) Mrs. Suzanne Matthews
ADDRESS: 152 Dupont St, (Apt), SC 29801
TELEPHONE: 803, 648-7145

E-MAIL:
1. We all know that MOX is manufactured
commercially in Europe. How many
commercial operations use a dry process
to produce their plutonium oxide fuel?
2. I read in the Cost Report where the pit
disassembly and conversion facility will
begin operation in 2004. (Did I see
you, for example) - in the last 20
years - where DOE has been able to
bring a \$500 million project from
laboratory scale to operation in
5 years!

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SCD58

SCD58-1

Feedstock

None of the commercial MOX fuel plants in Europe currently use a dry process to produce plutonium dioxide.

SCD58-2

Pit Disassembly and Conversion

DOE believes that beginning operations of the pit conversion facility in 2004 is a reasonable schedule. 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, and each specific operation in the dry pit conversion process has been successfully demonstrated. However, to ensure successful and timely transition to full-scale operation, DOE is testing these components as an integrated system at LANL. This pit disassembly and conversion demonstration is focusing on equipment design and process development and will provide information for fine-tuning the process and operational parameters prior to pit conversion facility operation. The information from the demonstration would be generated, gathered, and be available on a continuous basis throughout the facility design phase. A copy of the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998) is available on the MD Web site at <http://www.doe-md.com>. In addition, because the information from this demonstration would be used to supplement other information developed to support the design of a full-scale pit conversion facility, it would not be necessary for the demonstration to be completed before beginning pit conversion facility design and construction.

