

Commentor No. 2020: Chuck Lennox Seattle Audubon Society

09-20-2000 02:34PM FHL2 1U 18775b24582 P.02



20 September, 2000

Ms. Colette E. Brown, NE-50
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874

RE: Fast Flux Test Facility

Dear Ms. Brown,

I write on behalf of Seattle Audubon Society and its 5,600 members to express our opposition to the restart of the Fast Flux Test Facility (FFTF) that is proposed in the recent Nuclear Infrastructure Programmatic Environmental Impact Statement (NI-PEIS). Thank you for the opportunity to comment on this important matter.

After reading the NI-PEIS, we were concerned to learn that the U.S. Department of Energy (DOE) appears to be leaning towards Action Alternative 1(AA1), i.e. the "Restart FFTF" alternative over all other alternatives. This choice would pose the highest public health risks according to your NI-PEIS. We base this conclusion on the bar graphs of the NI-PEIS in pages S-48, S-49, S-51 and S-52. The diagrams in S-48 & 49 that summarize "Expected Latent Cancer Fatalities" due to (a) radiological accidents at sites (b) radiological transportation accidents and (c) risks due to incident free transportation, clearly display the high level of risk to public health, involved in proceeding with AA1. From the bar graphs in page S-51 & 52 similar conclusions can be reached regarding collision and emission fatalities from the various transportation parameters.

We urge the DOE to consider Action Alternative 5. Only AA5, that "Permanently deactivates the FFTF with no new missions" seems to provide the safest and cleanest route to travel from a public health standpoint. This decision would help the DOE reorient itself firmly in the direction of its core mission in Hanford, which is one of cleanup of all the nuclear wastes in the site. Moreover, the AA5 would help the DOE recover around \$30 million per annum, which is currently used to keep the FFTF in a "hot standby".

We would like to add further that the primary goals of the DOE: the (1) production of isotopes for medical and industrial uses (2) the production of Plutonium-238 for NASA and (3) other nuclear research for civilian uses are in no way jeopardized in abandoning the "Restart FFTF" alternative.

In April of 2000, the DOE's chosen panel of experts the "Nuclear Energy Research Advisory Committee" or NERAC, recommended that "the FFTF will not be a viable source of research isotopes". These research isotopes can be generated in a cost effective manner in the accelerators of various universities and research institutions. The added benefit would be one of less nuclear waste in the production process. This committee further states that DOE should not be in the business of producing either medical or industrial isotopes (violation of their mandate), that can and are currently

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- 2020-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and support for Alternative 5, Permanently Deactivate FFTF.
- 2020-2:** No final decisions have been made with regard to the facilities and locations evaluated to fulfill the requirements of the DOE missions, which include the production of medical and industrial isotopes, the production of plutonium-238 for NASA space missions, and civilian nuclear research and development. However, in accordance with Council on Environmental Quality regulations (40 CFR 1502.14(e)), DOE has identified its preferred alternative in Volume 1, Section 2.8 of the Final NI PEIS and included a discussion of DOE's reasons for selecting it. The Record of Decision for the PEIS will be based on a number of factors including environmental impacts, costs, public input, nonproliferation issues schedules, technical assurance, policy, and program objectives.
- 2020-3:** FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Sections 4.2-4.6 of Volume 1 provide the results of the evaluation of potential health impacts that would be expected to result from implementation of the alternatives, including normal operations and a spectrum of accidents that included severe accidents. Although there are minor differences in the risks among alternatives, the environmental analysis showed that radiological and nonradiological risks associated with all of the alternatives would be small.
- 2020-4:** While there are differences in risks among the alternatives and among options within alternatives, risks from incident free transportation and transportation accidents are small for all of the alternatives and options. Figures in Volume 1, Section 2.7.1, show that the risk of an additional fatality as a result of implementing any alternative is low. However, transportation risk is only one factor in DOE's decision. Accordingly, DOE has identified its preferred alternative in Section 2.8 of Volume 1 and included a discussion of DOE's reasons for selecting it. DOE's Record of Decision for the NI PEIS will be based on a number of factors including environmental impacts, public input, costs, nonproliferation impacts, schedules, technical assurance, and other policy and programmatic objectives.
- 2020-5:** See responses to comments 2020-1 and 2020-4.

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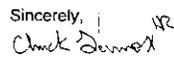
produced by the commercial industry, at great benefit to the US taxpayer. Moreover, the Washington State Medical Association and Physicians for Social Responsibility have stated that medical isotopes are readily available from Canada and other non-DOE sources. How can DOE justify the cost of restarting the FFTF at a cost of over \$423 million, when research isotopes can be produced using accelerators at \$106 million?

The second major reason in proposing "Restart FFTF" in this NI-PEIS is to supply the National Aeronautics and Space Administration (NASA) with Plutonium-238 for power generation in space reactors. Whereas NASA has unequivocally stated on May 22nd of 2000 that, "NASA has no longer an identifiable planned requirement for Small Radioisotope Thermoelectric Generator (STRG) power systems.", the DOE manages to insist to the contrary. Notwithstanding the fact that there is always a significant risk in sending nuclear powered space probes, these stated goals by the DOE make no sense either scientifically or economically.

Seattle Audubon can only conclude that to propose restarting of the FFTF just for civilian nuclear research no longer holds any validity.

Seattle Audubon is also quite concerned about the negative impacts to the environment that would result in the "Restart FFTF" alternative. Hanford, by all independent estimates, has a poor record of confining the nuclear wastes it already possesses. There are credible reports that indicate 68 of the 177 High-Level Nuclear Waste tanks are leaking. These wastes might have already polluted the ground water and may be proceeding towards the Columbia River. The untold damages that could accrue to the recently declared "Hanford Reach National Monument" are staggering. This 195,000 acre shrub-steppe ecosystem is the last free flowing non-tidal stretch of the Columbia river, that is home to the spawning of at least 80% of fall Chinook Salmon. The "Hanford Reach" is one of the keystones to recovery salmonid species in the recently declared Endangered Species Act listing. To add more nuclear waste to the Hanford complex, as the "Restart FFTF" would do, would be clearly counterproductive.

We urge the Department of Energy permanently deactivate the Fast Flux Test Facility. Thank you for your careful consideration of our comments.

Sincerely, 
Chuck Lennox
Conservation Chair
206-523-8243 ext. 13

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2020-6: The conclusions presented in the "NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000" regarding the suitability of the Fast Flux Test Facility (FFTF) to produce research isotopes in a timely and cost-efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FFTF for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of the FFTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FFTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates use of the FFTF when coupled with the other proposed missions. While some existing reactors may possess the potential capability or capacity to support research isotope production, as suggested in the NERAC report, it is unlikely that reliable, increased production of these isotopes to support projected needs could be accomplished without disturbing the existing missions of these facilities.

DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert committees, the Expert Panel and NERAC. In 1998, an Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years will range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings.

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Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. Although other manufacturers produce medical isotopes, DOE remains the key provider for a large number of radioisotopes that are used in relatively small quantities by individual researchers at universities and hospitals. Because their application is initially experimental, these isotopes are not generally purchased in large-enough quantities to make their production financially attractive to private industry. Under the NI PEIS proposed action and consistent with its mandates under the Atomic Energy Act, DOE would enhance its existing nuclear facility infrastructure to, among other things, more effectively support production of radioisotopes for medical applications and research. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the United States to meet future demands, and encourage the commercial sector to privatize the production of isotopes that have established applications to a level that would support commercial ventures.

Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of the remaining isotope production capability is dispersed throughout the DOE complex. This capability supports secondary missions, but cannot be effectively used due to the operating constraints associated with the facilities' primary missions (basic energy sciences or defense). DOE is currently meeting most of its short-term requirements. However, in the long-term (next 5 to 10 years) there will be a shortfall in available DOE capacity to meet demand. Should the isotope demand grow consistent with the Expert Panel Report, as it has recently, or if DOE's market share increases, there will be a need for expanded isotope production capacity in the short-term (less than 5 years).

2020-7: The commentor is comparing the cost of the low-energy accelerator, a element of Alternative 3, Construct New Accelerator(s), with the FFTF. The low-energy accelerator's only mission is to produce a select set of medical isotopes. The FFTF can produce a diverse set of medical and industrial isotopes, plus meet the requirements of the plutonium-238

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production mission, and the nuclear energy research and development mission. DOE considers all three missions of equal importance.

2020-8: The May 22, 2000, correspondence from NASA to DOE identifies that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, SRTG development efforts were stopped in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires one-third less plutonium-238 as its fuel source. However, the Stirling technology is developmental, and NASA has requested in a September 22, 2000, letter to DOE that large RTGs be maintained as backup. Section 1.2.2 of Volume 1 was revised to clarify plutonium-238 mission needs.

Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately only 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, DOE recognizes that any purchase beyond what is currently available to the United States through the existing contract would likely require negotiation of a new contract and may require additional NEPA review.

2020-9: As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. This would account for about 2,205 cubic meters of

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additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposal) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

The NI PEIS addressed the environmental impacts due to the treatment storage, and disposal of the waste generated by the proposed actions for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision.

2020-10: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

FFTF is approximately 4.5 miles from the Columbia River. There are no discharges to the river from FFTF and no radioactive or hazardous discharges to groundwater. As indicated in analyses presented in Chapter 4 of Volume 1 (e.g., Sections 4.3.1.1.4, 4.3.3.1.4, 4.4.3.1.4, 4.5.3.2.4, and 4.6.3.2.4), there would be no discernible impacts to groundwater or surface water quality at Hanford from operation of Hanford facilities that would support the nuclear infrastructure missions described in Section 1.2 of Volume 1.

Commentor No. 2022: David Leon Johnson

September 16, 2000

Collette Brown
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874

Dear Ms. Brown,

Enclosed are my comments on the "Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Missions in the United States, Including the Role of the Fast Flux Test Facility", (Nuclear Infrastructure Programmatic Environmental Impact Statement [NI-PEIS] (DOE/HIS-0310D)

Much has been made about the need for medical radioisotopes as outlined in the scope of the NI-PEIS. While I agree that medical isotopes are a high priority need, there are several serious flaws in the scope of the draft NI-PEIS.

It does not include the requirements for finding a new steady-state neutron source for doing world-class neutron scattering research. Furthermore, it does not include in its scope a facility that could perform such neutron scattering research. Finally, it does not show that a specially designed accelerator based steady-state neutron source facility could satisfy all the research and production needs outlined in the draft NI-PEIS as well as the need for neutron scattering research.

The following background material will explain the deficiencies in the scope of the draft NI-PEIS.

Attachment 1 (Titled Research Reactor of the Future: The Advanced Neutron Source) shows a description of the Advanced Neutron Source (ANS) that was to be built at Oak Ridge National Laboratory (ORNL). Attachment 1 also shows the needs for the facility. This steady-state neutron source facility was designed primarily to bring the U.S. back into world leadership in the field of neutron scattering research as noted in attachment 1. It was also designed to produce radioisotopes for use in medicine and other fields, and also various neutron research activities. It was to be the replacement for the aging High Flux Isotope Reactor (HFIR) at ORNL. The ANS project was funded by congress for about 10 years until about fiscal year 1996. It was terminated largely because its cost had grown to about \$3 Billion.

The requirements for a new steady-state neutron source to do world-class neutron scattering research have not gone away. In fact, they have actually increased! In about December of 1999, the U.S. Department of Energy (USDOE) permanently shut down the High Flux Beam Reactor (HFBR) at Brookhaven National Laboratory for environmental reasons. This reactor was one of the few steady-state neutron sources available in the US for doing world-class neutron scattering research.

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- 2022-1:** DOE notes the commentor's support for the production of medical isotopes and concerns with the scope of the PEIS. The scope of this NI PEIS does not include finding a new steady-state neutron source for conducting neutron scattering research.
- 2022-2:** Neutron scattering research is not a primary area of interest in the proposed nuclear research and development program. The proposed nuclear research and development program is focused in the support of civilian nuclear energy programs.

The NI PEIS evaluated a steady state spallation neutron source, the high energy accelerator as part of Alternative 3, Construct New Accelerators. As stated in Volume 1, Section 2.3.1.5.2, the design of the high-energy accelerator presented in the NI PEIS focused on supporting the plutonium-238 production mission, but the design could be refined and expanded to perform additional missions such as the production of a select set of medical and industrial isotopes. The modified high-energy accelerator and low-energy accelerators could jointly produce a broad spectrum of medical and industrial isotopes.

DOE is aware of longer-term concepts that would apply high-energy accelerators to produce "tunable" neutrons in a subcritical assembly. Such a facility could be used to address some of the missions more familiar to reactor facilities and may hold considerable promise for future science and technology research. A facility of this nature could provide unique capabilities in areas such as the testing of many different nuclear system coolant, fuel, and materials interactions.

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The USDOE is currently designing a new pulsed neutron source for doing neutron scattering research. It is called the Spallation Neutron Source (SNS) and is to be built at ORNL. However, there is a critical need for **both** a steady-state and a pulsed neutron source for doing neutron scattering research.

Attachment 2 (Titled: A History of the ANS: Going Back to the Source) shows a history of the ANS concept. In this document, there is a description of the need for **both** a steady-state and a pulsed neutron source for doing neutron scattering research. This document is quoted below.

In 1991, the Basic Energy Sciences Advisory Committee (BESAC) of DOE's Office of Energy Research (OER) was asked by OER Director Will Happer to form a panel to revisit the question of whether a reactor or spallation source would make the best neutron source. The panel was headed by Walter Kohn of the University of California at Santa Barbara, who had been a member of the Seitz-Eastman committee.

In June 1992, the Kohn committee issued its report. According to the report, the BESAC panel concluded that "the nation has a critical need for a complementary pair of sources: a new reactor, the Advanced Neutron Source (ANS), which will be the world's leading neutron source, and a pulsed spallation source. . . . The ANS is the Panel's highest priority for rapid construction. In the Panel's view, any plan that does not include a new, full-performance high-flux reactor is unsatisfactory because of a number of essential functions that can best or only be performed by such a reactor."

Again, it is pointed out that the needs for a steady-state neutron source to enable world-class neutron scattering research have not gone away, they have increased.

It is noted here that an accelerator based steady-state neutron source facility could supply all the needs outlined in the scope of the draft NI-PEIS and, in addition, could provide for doing world-class neutron scattering research. A proposal for such a facility was outlined in a document that I co-authored 15 years ago. Attachment 3 (Titled: An Accelerator Based Steady State Neutron Source) is a copy of that proposal. This was to be an accelerator facility that used the spallation principal, just like that employed for the SNS. However, the beam energy was to be much less, hence the capital cost would be less. Furthermore, it was to be steady-state so as to provide a steady-state source of neutrons, just as in a reactor.

Technical details are outlined in attachment 3. One point that should be made is that such a facility would be capable of producing all the same radioisotopes that could be made in the FFTF and in the same or greater quantities. However, they would be made without any of the same nuclear wastes that would be produced by the FFTF. There would be NO production of hard-to-deal-with fission products or transuranic isotopes such as Plutonium. Furthermore, the safety is dramatically improved compared to the FFTF. For example, accelerators do not generally require containment vessels as reactors do. Moreover, there are no criticality issues as in a reactor. When the accelerator beam goes away, the neutrons go away.

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2022-2
(Cont'd)

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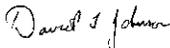
The proposal in attachment 3 was made at the initial conference in 1985 to select what eventually became the ANS. It was rejected, in my opinion, because the people reviewing the proposals had reactor proposals that were in competition for the funding to proceed. In other words, they were biased in favor of getting funds for their own reactor proposals. However, the reactor proposal that eventually emerged became too expensive to build.

Since 1985, when the original accelerator proposal was made, there have been significant advances in accelerator technology. These advances, particularly at Los Alamos National Laboratory (LANL), have demonstrated beyond any doubt the ability to provide the very high steady-state beam currents that are needed for the proposed accelerator source. Furthermore, there have been advances that allow significant reduction in accelerator costs. These reductions are both for construction costs and for operating costs. The cost to build such an accelerator facility should be considerably less than the \$3 Billion required to build the cancelled ANS.

In summary, I propose that the final NI-PEIS be modified to incorporate the following items.

- 1) Include neutron scattering research as proposed for the ANS facility as the primary mission.
- 2) Include analysis of a variant of the accelerator based steady-state neutron source similar to what was proposed in attachment 3 to do all the missions in the current draft NI-PEIS and also world-class neutron scattering research
- 3) Do a better job of providing a design for an accelerator based steady-state neutron source that is cost competitive with restarting the FFTF. The cost estimate of over \$1 Billion for a spallation accelerator for making only the isotope Pu-238 in the draft NI-PEIS seems obviously too high. The spallation accelerator at LANL called the Los Alamos Meson Physics Facility (LAMPF) was built about 30 years ago and has the same beam energy and a beam current similar to what was proposed for the draft NI-PEIS. That design could be used without outrageous cost contingency factors.
- 4) Do not include the \$281 Million cost that was estimated for dismantling the FFTF as part of the cost to build an accelerator facility. The cost for dismantling the FFTF should be tacked onto its cost for restart since it will eventually be shut down and should come out of the same budget.

Sincerely,

| | | |
|---|--------------------|--------------------------|
| David L. Johnson | David Leon Johnson | phone/FAX: 360-825-0480 |
|  | P.O. Box 1034 | |
| | Enumclaw, WA 98022 | e-mail: dave.dlj@gte.net |

Attachment 1 - Research Reactor of the Future: The Advanced Neutron Source
Attachment 2 - A History of the ANS: Going Back to the Source
Attachment 3 - An Accelerator Based Steady State Neutron Source

Response to Commentor No. 2022

**2022-2
(Cont'd)**

2022-3

2022-3: Deactivation of FFTF is not part of implementing Alternative 1, Restart FFTF. Deactivation of FFTF is part of Implementing Alternative 2, 3, 4, and 5 and including the cost of deactivation in the implementation costs for these alternatives is appropriate.

The U.S. Congress funds the Hanford cleanup through the Office of the Assistant Secretary for Environmental Management (EM), and the FFTF through the Office of Nuclear Energy, Science and Technology (NE). The nuclear infrastructure missions described in Section 1.2 of Volume 1 would also be funded by NE, which has no funding connection to Hanford cleanup activities. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

Commentor No. 2023: Lynn Sims

DOE

From: Lynn Sims <dwac@teleport.com> on 06/13/2000 08:53 AM GMT

To: president@Whitehouse.GOV
cc:
Subject: NO TO PLUTONIUM USED AS FUEL!!!

Dear President Clinton

The use of plutonium in nuclear reactors is an insane program. It is tremendously expensive and risky. Moreover it promotes more handling and transport of plutonium, increases risk of accident and complicates spent fuel "disposition."
Instead, immobilize plutonium and turn towards more sustainable energy sources.

Lynn Sims
3959 NE 42
Portland, OR
97213

|| 2023-1
|| 2023-2
|| 2023-3
|| 2023-4
|| 2023-5

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- 2023-1:** The commentor's position on the use of plutonium in nuclear reactors is noted. Human health effects that would result from any of the range of reasonable nuclear infrastructure alternatives analyzed (described in Section 2.5 of Volume 1) are described in Chapter 4. Plutonium is one of the radioisotopes included in the analysis of health and safety impacts. Both radiological and chemical impacts were addressed. (See Appendix H) Plutonium was identified as a primary contributor to the health impacts that would result from processing irradiated neptunium targets at candidate processing facilities. Sections 4.3 through 4.6 of Volume 1 provide the results of the evaluation of potential health impacts that would be expected to result from implementation any of the range of reasonable alternatives (Alternative 1 includes restart of FFTF), including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with each analyzed alternative and with restarting FFTF would be small.
- 2023-2:** While there are differences in risks among the alternatives, the risk from transportation accidents is small for all the alternatives. Figures and tables in Section 2.7.1 of Volume 1 summarize transportation risks and provide a comparison of transportation risks among alternatives and among options within alternatives. Transportation risk is only one factor in DOE's decision. Accordingly, DOE has identified its preferred alternative in Section 2.8 of Volume 1. DOE's Record of Decision for the NI PEIS will be based on a number of factors including environmental impacts, public input, costs, nonproliferation impacts, schedules, technical assurance, and other policy and programmatic objectives.
- 2023-3:** The NI PEIS assumes that FFTF would initially be fueled by a mixed oxide (MOX) fuel, essentially the same as that used successfully during the previous ten years of safe operation. While there are differences associated with the use of MOX fuel versus uranium fuel, these differences are not expected to significantly affect the safety of the FFTF. Differences between MOX fuel and uranium fuel are well characterized and can be accommodated through fuel and core design.
- 2023-4:** As stated in section 4.3.1.1.4 of the NI PEIS, "the spent [FFTF] nuclear fuel would be packaged in acceptable containers and shipped to a geologic repository for ultimate disposal." The NI PEIS assumes, for the purposes of analysis, that Yucca Mountain, Nevada, would be the final

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disposal site for DOE's high-level radioactive waste and spent nuclear fuel. As directed by the U.S. Congress through the Nuclear Waste Policy Act, as amended, Yucca Mountain is designated, and is currently being characterized, as the candidate site for constructing a geologic repository for disposal of high-level radioactive waste and spent nuclear 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 geological repository. Based on the categorization of DOE fuel types provided in Appendix A of the EIS, the spent mixed oxide fuel from FFTF is expected to be disposable in its current form and does not need to be immobilized.

2023-5: DOE notes the commentor's interest in alternative energy sources, although issues of research and development of alternative energy sources are beyond the scope of this Nuclear Infrastructure PEIS. The DOE missions to be addressed in this EIS, which include the production of medical and industrial isotopes, the production of plutonium-238, and civilian nuclear energy research and development, can currently only be met using nuclear reactor or accelerator technologies. Immobilization of weapons-grade plutonium is discussed in the Surplus Plutonium Disposition Final Environmental Impact Statement, DOE/EIS-0283, published in November 1999. Plutonium-238 is not used to manufacture nuclear weapons.

Commentor No. 2024: Andrew Eisman

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9/18/2000

Colette E. Brown, Document Manager
Office of Space and defense Power Systems (NE-50)
Office of Nuclear Energy, Science & Technology
US Dept. Of Energy
19901 Germantown RoadValued Gateway Client Page 1 9/18/2000
Germantown, MD 20874
Attention: NI PEIS

Dear Ms. Brown:

Thank you for the opportunity to respond to the FFTF DEIS, formally known as "Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility." I am a former nuclear and aerospace engineer and have direct experience working the computer controls of a nuclear power plant, with over 25 years of professional computer systems and network systems experience.

I am submitting testimony that can only bring one to the conclusion that the FFTF facility needs to be decommissioned ASAP. And I support NI PEIS alternative 5, which states "Permanently deactivate FFTF (with no new mission)".

The over all stated mission is misguided in many ways. The production of isotopes for medical purposes can be accomplished in other safer manners, and existing international supplies now and in the future will out strip the needs.

Current manual override controls are not being reviewed. Past problems with these controls caused over 1 million dollars of damage to the FFTF facility. Future abuse of such controls by FFTF staff could cause a catastrophic failure of the facility and a possible meltdown. Such a scenario has not been analyzed or commented upon in this document.

The reality of this issue is that the FFTF facility is designed and planed for use to produce Tritium for the production of Nuclear Warheads. This hidden agenda is spelled out clearly in two documents. U.S. Senator Slade Gorton (R-WA) press release dated January 15, 1997 he states: "I will be working side by side with my Washington state colleagues to see that FFTF becomes an integral part of the nation's tritium mission, ultimately phasing into the production of medical isotopes.". Additionally, in an article written by Bob Ferguson (who was director of the Fast Flux Test Facility from 1973 to 1980) that appeared in the Tri-City Herald (© 1997), he states: "Evaluations by DOE and by the JASON Group, an independent panel of nationally recognized scientists, has determined FFTF can supply most of the tritium needed to meet the presidentially determined national stockpile requirement. ...In this sense, FFTF should be considered as the most flexible way to reliably produce tritium now while efforts to reduce the need for tritium are pursued." This proves that this DEIS is complexly inadequate because it ignores the real processing issues that are going to be secretly pursued. Until this DEIS includes the

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Response to Commentor No. 2024

- 2024-1:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.
- 2024-2:** DOE acknowledges that other manufacturers can produce certain isotopes that are economically attractive. In fact, the United States currently purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements. Section 1.2.1 of Volume 1 has been revised to clarify DOE's isotope production role and other producers' capabilities to fulfill U.S. isotope needs.
- 2024-3:** Although it is not practical to analyze every conceivable accident scenario a representative spectrum of bounding accidents was evaluated in the NI PEIS. The accident analysis included a review of internal events, external events, natural phenomena, common-cause events, and sabotage and terrorist activities. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected from implementation of Alternative 1. The environmental analysis showed that radiological and nonradiological risks associated with restarting the FFTF would be small.
- 2024-4:** DOE notes the commentor's views. The NI PEIS evaluates a range of reasonable alternatives for expanding DOE's existing nuclear facility infrastructure for the purposes of addressing three primary needs: 1) to support the need for increased domestic production of isotopes for medical, research, and industrial uses, as initially identified by a panel of experts in the medical field and reaffirmed by the Nuclear Energy Research Advisory Committee; 2) to support future NASA space exploration missions by re-establishing a domestic capability to produce plutonium-238, a fuel source that is required for deep space missions and which the U.S. has no long-term, assured supply; and 3) to support civilian nuclear research and development needs in order to maintain the clean, safe, and reliable use of nuclear power as a viable component of the United States' energy portfolio. However, no component of the proposed action is for the purpose of producing tritium or supporting any defense or weapons-related mission. Tritium for national security needs will be produced in commercial light water reactors (65 FR 26259). Section 1.2

Commentor No. 2024: Andrew Eisman (Cont'd)

NI- PEIS Comment from Andrew Eisman Page 2

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risk analysis of Tritium production and the associated impact to the Worldwide efforts to reduce the Nuclear arms threat, it will remain inadequate and incomplete.

There are issues in the DEIS that are poorly researched. For example, experimental research has a much higher risk of catastrophic failure than standard operation. Such research is included in the scope of this DEIS. With out exact specifics on the scientific methodologies and technologies that will be studied and the exact experiment that will be conducted, it is impossible to calculate the risk factors to the public and working population. It is also impossible to calculate the actual cost benefit analysis.

The future NASA missions may not happen. Any analysis conducted on the need for plutonium-238 is speculative at best and cannot be included in an DEIS. Additionally, the former Soviet Union has dangerous supplies that should be purchased before they are sold on the open market. This could prevent the spread of nuclear materials to those who should not have them. Russia has a large black market that must already be attempting to gain access to these materials.

I have reviewed the DEIS and can go on for hundreds of pages about its' inadequacies. It is unfortunate that the DEIS comment period is so limited. It requires a team of over a hundred people at least 6 months to fully understand the entire scope of this proposal/analysis. As a result, I have limited my analysis to several narrow areas, pointing out the inaccuracies of analysis as examples of this document. There is a lack of mandate and scientific justification for the restart of the FFTF facility.

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Response to Commentor No. 2024

of Volume 1 was revised to clarify the purpose and need of the proposed action.

2024-5: The NI PEIS accident analysis evaluated a representative spectrum of accidents, including severe accidents which involved damage to the entire FFTF core. In contrast, accidents involving experiments in a research reactor usually result in damage to the experiment itself and relatively limited damage to the reactor. Hence, the accidents reported in the NI PEIS are considered to bound the consequences of typical experiments.

The NI PEIS stated in Section 1.2.3 that “reactor physics and criticality safety data for benchmarking computational codes and analytical methods used in fuel design and performance analysis would also be required.” Such data are readily obtained by the use of well designed, safe experiments that do not involve the risk of an inadvertent criticality and are able to provide useful data for validating computer codes and other computational methods. It is neither necessary nor desirable to “push the safety limits of the material being tested past the limits of safety” in order to obtain this data.

2024-6: DOE agrees with the commentor that the benefits of experimental research are difficult to quantify. The estimated costs of the range of reasonable alternatives are presented in the Cost Report, summarized in Appendix P of the Final NI PEIS. However, the Cost Report is not a cost-benefit analysis. The purpose of this NI PEIS is to describe the nuclear infrastructure missions (Section 1.2 of Volume 1), a range of reasonable alternatives for satisfying the mission requirements (Section 2.5 of Volume 1), and the environmental impacts that would result from implementation of the alternatives. According to 40 CFR Section 1502.23 if a cost-benefit analysis exists, it must be reported and summarized in the NI PEIS.

2024-7: DOE notes the commentor’s opposition to production of plutonium-238 for use in future NASA space exploration missions. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE’s charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to

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ISSUE 1

In Vol. 1 of the Draft EIS, Page 1-2 States "For analysis purposes, this NI PEIS evaluates impacts from facility construction, modification, startup, and 35 years of operation, followed by decommissioning when applicable."

This statement indicates that eventual decommissioning is required. In the cost analysis of operation, this needs to be calculated in the overall financial equation. Increased costs of decommissioning in the future due to shortage of appropriate waste sites and inflation need to be considered. Additionally, a 35 year life expediency is absurd and has not scientific data to support it with in the body of the EIS. This would, with the already 15 years of life (10 active years which saw several significant accidents (not reported in this report) that effected safety for its' workers and the general population)), far out last any other nuclear power plant and raises serious safety questions. The facilities designed life cycle is much less. Thus, all calculations based on this unrealistic life expectancy are thus inaccurate and misleading.

ISSUE 2

Page 3-7 of the Cost report for Alternatives Presented in the Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility. Paragraph 1 states "Current DOE plans, therefore, are to focus initially on the production of medical isotopes that exhibit the most significant medical potential, given an adequate supply, and to look to other promising areas of production when that potential is realized and sustained by supplies from private resources."

This statement has several problems. One would be the lack of specifics on the "other promising areas of production...". What are the risks associated with his on specified research? What are the costs and benefits? Where is the analysis of this information in the DEIS? It sounds like the DOE will be in direct competition with the private sector- I believe this would be counter to the mission of the DOE.

ISSUE 3

Volume 1, Chapter 1 Section 1.2.2 of the *Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States*, states "Because it is not in the best interest of the United States to continue relying on foreign sources to provide an assured, uninterrupted supply of plutonium-238 to satisfy future NASA space exploration mission requirements, DOE proposes to re-establish a domestic capability for producing and processing this material. Since the SRS facilities previously used for plutonium-238 production are no longer available, DOE needs to evaluate other DOE irradiation and chemical processing facilities, as well as potential commercial light water reactors (CLWR), for this mission."

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provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions; no viable alternative to using plutonium-238 to support these missions currently exists. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Without an assured domestic supply of plutonium-238, DOE's ability to support future NASA space exploration missions may be lost.

DOE could purchase plutonium-238 from Russia; however, for supply reliability reasons and concern of nuclear nonproliferation, DOE's preference is to establish a domestic plutonium-238 production capability. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

2024-8: As stated in EIS Volume 1, Section 1.2.2, DOE has had a contract with Russia to purchase plutonium-238 since 1992 and is aware of the existence and production capability of plutonium-238 in Russia. However the political and economic climate in Russia creates uncertainties that could affect the reliability of plutonium-238 supply from this source. This is the reason for evaluating alternatives to plutonium-238 purchase from Russia in this EIS. The potential nonproliferation impacts of continued purchases from Russia are discussed in Section 8.2 of the Nuclear Infrastructure Nonproliferation Impact Assessment which was published in September, 2000.

2024-9: The original comment period on the Draft NI PEIS was set at 45 days according to the Council on Environmental Quality's (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR 1506.10(c)). As stated in the Notice of Availability (65 FR 46443 et seq.), the public comment period extended from July 28, 2000 to September 18, 2000. In preparing the Final PEIS, DOE has assessed and considered both oral and written comments received on the Draft PEIS during the public comment period and has responded to these comments in the Final PEIS. Volume 3 of the NI PEIS contains public comments received on the NI PEIS and DOE responses to those comments. Moreover, late comments were considered to the extent practicable.

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This is subjective speculation not support by any information. I would argue it is in the best interest of the United States to complete purchase down all of the Russian supply of plutonium 238. It would be a safer would if we did! Additionally, there is the assumption that the production would not be interrupted because of the mixed missions of the FFTF facility, nor the high potential for accident (given the DOE's history and the age of the FFTF facility- its' recent past history of operation and the lack of experienced operators.

ISSUE 4

Volume 1, Chapter 1 Section 1.2.4 under the paragraph "Materials Research" of the *Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States*, states "The high radiation fields, high temperatures, and corrosive environments in nuclear reactors (terrestrial or space) and other complex nuclear systems (e.g., accelerator transmutation of waste [ATW] systems) can accelerate the degradation of pressure vessels and structural material, component materials, material interfaces, and joints between materials (e.g., welds). Radiation effects in materials can cause a loss of mechanical integrity (fracture toughness and ductility) by embrittlement, dimensional changes (creep and swelling), and fatigue and cracking (irradiation-assisted stress corrosion cracking). Acquiring a fundamental understanding of radiation effects in current and future reactor materials (engineered steel alloys, ceramics, composites, and refractory metals), as well as the experimental validation of analytical models and computational methods, would require material irradiation testing over a range of neutron energies (thermal and fast flux) and doses. Material testing under simulated reactor conditions would be required to ensure the compatibility of advanced materials with the various moderators/coolants of future reactor concepts. In addition, the thermophysical properties and behaviors of liquid metal coolants being considered for advanced reactor (terrestrial or space) and ATW systems would require further irradiation testing. One key area of materials research that is important to plant safety and the license renewal of existing nuclear power plants is the accelerated aging of materials to simulate radiation effects over a plant lifetime."

This statement indicates the pure absurdity of starting up the FFTF. The statement can be summarized as "The DOE wants to start the FFTF so we can find out exactly how dangerous the FFTF is under operation!" This is unscientific! We need more information on exactly what the experiments will be as well as independent scientific peer-review before this have thought out idea is pursued. This section goes on to talk about "criticality safety" data that would be acquired. In order to obtain this data, one needs to push the safety limits of the material being tested past the limits of safety to study its effects. This in it self is a huge risk to the general population. The DOE has already had significant failures in safety and safety reporting over its involvement in the Nuclear research history. This type of experiment safety can not be fully assessed by its very nature. And thus should not be performed at such an aging facility over such a long period of time. The nature of this research will stress all safety measures, equipment, structures of the FFTF facility and is not properly analyzed in the body of the documents.

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Response to Commentor No. 2024

2024-10: While the Cost Report evaluates the cost of permanently deactivating FFTF as described in the NI PEIS, it does not consider the costs of ultimate decontamination and decommissioning of the facilities evaluated for the proposed actions. There are several reasons for this but, foremost among them, is the fact that decontamination and decommissioning technologies are ever evolving. Due to the great uncertainty associated with what the costs would be in 35 years (the end of the mission campaign) given the state of technological development at that time, it was deemed impractical to estimate decontamination and decommissioning costs with any degree of certainty or contingency.

2024-11: FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. The technical issues that need to be addressed to assure safe operation for an extended lifetime are well understood. The U.S. Nuclear Regulatory Commission has extended the operating license for a commercial power plant an additional 20 years over and above its current 40 year licensing period and is anticipating several more extensions in the near future.

2024-12: The estimated costs of the range of reasonable alternatives presented in the Cost Report, are summarized in Volume 2, Appendix P of the Final NI PEIS. However, the Cost Report is not a cost-benefit analysis. While it is reasonable to believe that the benefits of medical isotopes are substantial, the purpose of this NI PEIS is to describe the nuclear infrastructure missions (Section 1.2 of Volume 1), a range of reasonable alternatives for satisfying the mission requirements (Section 2.5 of Volume 1), and the environmental impacts that would result from implementation of the alternatives. According to 40 CFR Section 1502.23 if a cost-benefit analysis exists, it must be reported and summarized in the NI PEIS.

DOE acknowledges that private commercial vendors could produce a select set of isotopes that are economically attractive. It is not DOE's intent to enter into competition with the commercial sector in the production of isotopes. Rather, DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the United States to meet future demand, and to encourage the commercial sector to privatize the production of isotopes that have established applications to a level that would support commercial ventures.

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Issue 5

Chapter 2, Section 2.3.1.1.2 of the *Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States*, states, (numbers for modifications supplied by this author to allow reference), "The following is a brief list of the planned modifications if FFTF would be restarted (PNNL 1999).

- 1: Upgrade of plant protection system (scram breakers, power supplies, and signal conditioners)
- 2: Replacement of zero-time-outage motor generator sets with solid-state electronic units
- 3: Upgrades of plant data systems computers
- 4: Upgrade of conductivity metering system on three cooling towers and replacement of electronic sensors and controls
- 5: Installation of two new electrical distribution transformers to replace the polychlorinated biphenyl-filled units that were removed during standby operations
- 6: Establishment of a program to assess and replace elastomer seals during the startup period to take advantage of advancements in seal technology
- 7: Upgrades of the plant simulator (A program to upgrade the existing simulator to reach commercial simulator standards was in progress, but was discontinued when FFTF was placed in standby.)"

These upgrades are not carefully and individually analyzed for their associated impacts to safety. While there planned impacts are positive, huge risks are associated in retrofitting this live facility. Data concerning the online testing of the plant data system computers is not provided. This upgrade will have to be tested in place and thus can lead to catastrophic consequences. Like IFBBF in Idaho Falls, the DOE is relying on third party private contractors that have not been provided with complete information. DOE employees must reply on documentation for final implementation and the complete testing of this package has never and can never be accomplished except on a live reactor- a risk factor not analyzed in this DEIS.

The current state of the elastomer seals is not known. As a result, even maintaining the FFTF facility in its' current standby state is dangerous. A full analysis of impacts of replacements and possible spills of dangerous eradiated materials during the replacement of the elastomer has not been included in this DEIS.

ISSUE 6

In section 2.3.1.1.5 **FFTF Deactivation** it states "This would require placement of FFTF in a radiologically and industrially safe shutdown condition that is suitable for a long-term surveillance and maintenance phase prior to final decontamination and decommissioning. An *Environmental Assessment - Shutdown of the Fast Flux Test Facility, Hanford Site, Richland, Washington*, issued by DOE in 1995, addressed the environmental impacts associated with permanently deactivating FFTF (DOE 1995a)."

2024-15

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2024-13: FFTF is capable of producing the maximum estimated amount of plutonium-238 for NASA (5 kilograms per year), as well as supporting the other nuclear infrastructure mission described in Section 1.2 of Volume 1. The most likely accident that could disable the facility for an extended period would be a design basis primary sodium spill. This accident, evaluated in the NI PEIS, has an estimated probability of occurrence of one in 10,000 years (1×10^{-4}) per year, and is therefore unlikely to impact plutonium-238 production. Smaller sodium spills, while more likely, would not shut down the facility for an extended period.

2024-14: Clean, safe, reliable nuclear power has a role today and in the future for our national energy security. In recognition of this need, nuclear energy research and development programs have been initiated to address potential long-term barriers to expanded use of nuclear power (e.g., nuclear waste, proliferation, safety, and economics) and to ensure that current nuclear power plants can continue to deliver adequate and affordable energy supplies. Because it is unlikely that existing facilities could fully and effectively support these nuclear energy research and development initiatives without disturbing their existing missions, DOE is proposing to enhance its nuclear facility infrastructure to also support these activities. Further information on the need for nuclear energy research and development is provided in Section 1.2.3 of Volume 1.

Scientists from around the world participate in DOE research and development programs. All experiments undergo thorough review before acceptance and safety is an integral consideration of all DOE experimental work.

2024-15: As noted in the NI PEIS, these upgrades would have small environmental consequences. They would, individually and collectively, have a beneficial and positive impact on safety and reliability. Since these modifications can be made while the facility is defueled, there would be almost no radiological risk during modification. It is premature to provide data on testing of the plant data systems computers at this time except that they would most certainly be fully tested prior to plant restart. Also, the plant data system computers are not a part of the plant safety systems.

Maintaining the FFTF in its current standby state is not dangerous. Section 4.2.1.2.10 provides the results of the evaluation of potential health

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The full benefits of deactivation need to be included in this section. Impacts to reduced nuclear world war, the nuclear arms race and international relations and economic fall out must be analyzed.

This previous environmental assessment needs to be a part of this DEIS. The full life cycle of the FFTF needs to be considered in the DEIS if reactivation is considered. The total cost of restarting and maintenance needs to be included. If after 15 years the proposed changes are being made, what are the regular maintenance over the proposed 30 year operations period? In 15 more years (or less) will we see similar proposed modifications? The complete costs assessment needs to be included for this DEIS to be complete.

Sincerely,

Andrew Eisman
939 SE 17th Ave
Portland OR 97214

2024-16

2024-17

Response to Commentor No. 2024

impacts that are expected from maintaining FFTF in its current standby condition. The environmental analysis showed that radiological and nonradiological risks are negligible. Prior to an FFTF restart, a revised safety analysis report and probabilistic risk assessment would be prepared which would address any changes in plant configuration, operating conditions, and procedures. The revised safety analyses would be subjected to a thorough independent review.

2024-16: Environmental impacts, including social and economic impacts, that would result from deactivation of FFTF are addressed in Section 4.4.1.2 of Volume 1. The nuclear infrastructure missions described in Section 1.2 are unrelated to the national defense, and nuclear weaponry would not be produced under any of the alternatives described in Section 2.5. Activation or deactivation of FFTF would be unrelated to the nuclear arms race. Potential impacts on the nation's nonproliferation policies that would result from activation of FFTF are discussed in Section 2.3.1.1.3 and a separate report prepared by DOE in September 2000 titled "Nuclear Infrastructure Nonproliferation Impact Assessment" (DOE/NE-0119).

2024-17: As specified in 40 CFR 1502.21 of the CEQ regulations for implementing NEPA, DOE has incorporated by reference the Environmental Assessment, Shutdown of FFTF, Hanford Site, Richland, Washington (DOE/EA-0993) to reduce the relative bulk of the NI PEIS, with a summary of the relevant information for the EA provided in Section 4.4.1.2 of Volume 1. While the PEIS evaluates the impact of permanently deactivating FFTF as further detailed in the Environmental Assessment, it does assess the impacts of permanent deactivation and decommissioning including dismantlement and disposal) which would be the subject of subsequent NEPA review.

CEQ (40 CFR 1500 et seq.) and DOE (10 CFR Part 1021) implementation regulations do not require inclusion of cost studies in an environmental impact statement. The basic purpose of the NI PEIS is to describe the alternatives under consideration for implementation (Section 2.5 of Volume 1) and the environmental impacts that would occur if these alternatives were implemented (Chapter 4 of Volume 1). Pursuant to CEQ regulations (40 CFR 1505.1(e)), agencies are encouraged to make ancillary decision documents available to the public before a decision is made. The associated cost report was made available to the public on August 24, 2000. DOE mailed the cost report to approximately 730 interested parties, and the reports were made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in public reading rooms.

Commentor No. 2025: Anonymous

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Draft PEIS Comment Form

Ms Brown: Please adjust Alternative 5, "Permanently Deactivate FTF, (With No New Missions.)" 1. At best, nothing in this project remotely justifies even the slightest chance of either adding a curies of radioactive waste to the Hanford environment or subtracting a dollar from the Hanford cleanup budget. 2. The supposed need for isotopes was unconvincing the first time that it was proposed as a rationale for FTF restart. The context of the NERAC report and the DOE's own LANL project belie Energy's current assertion of need. 3. The budget analysis is particularly weak. While there may be legitimate debate about which amounts go where, there is no way that restart could possibly not impact a budget which has no allowance for decommissioning. It is beyond belief that the managing organization which has produced so much more in reports, studies and schemes like the current one and so little in tangible results should accomplish the marketing miracle of increasing demand for isotopes to the degree projected. 4. This project will have a totally negative effect on non-proliferation efforts, effectively "nuking" any pretense of U.S. credibility. Conversely, if plutonium were purchased from Russia, we would at least know the disposition of the quantity delivered. 5. The entire

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There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
returning this comment form to the registration desk at the meeting or to the address below
calling toll-free and leaving your comments: 1-877-562-4593
faxing your comments toll-free to: 1-877-562-4592
commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional):
Organization:
Home/Organization Address (circle one):
City: State: Zip Code:
Telephone (optional):
E-mail (optional):

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Colette E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free telephone: 1-877-562-4593 • Toll-free fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00

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- 2025-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FTF.
2025-2: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1 2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The conclusions presented in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 regarding the suitability of FTF to produce research isotopes in a timely and cost efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FTF for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of FTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates the use of FTF when coupled with the other stated missions. While some

Commentor No. 2025: Anonymous (Cont'd)

Ford, Draft PEIS Comments, Page 2

project seems like a make-work pork barrel for the Tri-Cities, DOE, PNL, and the commercial nuclear industry. U.S. citizens of the Pacific Northwest have no intention of suffering further cleanup delays or additional waste for any such purpose. Thank you.

2025-5

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existing reactors may possess the potential capability or capacity to support research isotope production, as suggested in the NERAC report, it is unlikely that reliable, increased production of these isotopes to support projected needs could be accomplished without impacting the existing missions of these facilities.

The Isotope Production Facility (IPF) at Los Alamos National Laboratory produces radioisotopes using the Los Alamos Neutron Science Center's LANSCE) half-mile accelerator that delivers medium-energy protons. Among other isotopes, the IPF's three major products include germanium 68, strontium-82, and sodium-22. As a result of changing DOE missions, the production of radioisotopes at target area "A" of the LANSCE has been rendered inoperable. In order to replace the level of production lost due to this change, DOE is completing a new and more efficient IPF that would allow DOE to continue to produce most of these same isotopes in an effort to meet existing demand. As addressed in Section 2.6.1 of the NI PEIS, IPF at LANSCE was considered but dismissed from further evaluation because, although it can be used in tandem with the Brookhaven Linac Isotope Producer (BLIP) located at the Brookhaven National Laboratory to supply near-term isotope requirements, it is unlikely that these facilities could accomplish reliable, increased isotope production at the level needed to support projected needs.

The use of any of the proposed facilities would not impact the schedule, available funding, or progress of the cleanup missions at any of the candidate sites. Chapter 4 of Volume 1 addresses wastes produced for each alternative, as well as cumulative impacts related to waste production. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

2025-3: While the Cost Report evaluates the cost of permanently deactivating FFTF as described in the NI PEIS, it does not consider the costs of ultimate decontamination and decommissioning of the facilities evaluated for the proposed actions. There are several reasons for this. Foremost

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Response to Commentor No. 2025

among them is the fact that decontamination and decommissioning technologies are evolving. Due to the uncertainty associated with what the costs would be in 35 years (the end of the mission campaign) given the state of technological development at that time, it was deemed impractical to estimate decontamination and decommissioning costs with any degree of certainty or contingency.

2025-4: DOE developed a separate nuclear infrastructure nonproliferation impacts assessment report which was completed and distributed in September, 2000. This report concluded that, "There are currently no U.S. nonproliferation policies, laws, regulations, or international agreements that preclude the use of any facilities in the manner described in the draft NI PEIS". As stated in EIS Volume 1, Section 1.2.2, DOE has had a contract with Russia to purchase plutonium-238 since 1992 and is aware of the existence and production capability of plutonium-238 in Russia. However, the political and economic climate in Russia creates uncertainties that could affect the reliability of plutonium-238 supply from this source. This is the reason for evaluating alternatives to plutonium-238 purchase from Russia in this EIS. This assessment also evaluated the nonproliferation risks of continued purchase of plutonium-238 from Russia. Since this plutonium contains a minimum of 80 percent plutonium-238, the report concluded that, "...is not considered a nuclear proliferation threat by the international safeguards community." Therefore, purchase of this material from Russia does not reduce the Russian weapons useable plutonium inventory because plutonium-238 is not used in nuclear weapons.

2025-5: DOE notes the commentor's opinions on the purpose and need for the proposed action and concerns regarding the existing cleanup mission at Hanford and new waste generation.

DOE was tasked by Congress in the Atomic Energy Act of 1954, as amended, to "ensure the availability of isotopes for medical, industrial, and research applications, meeting the nuclear material needs of other federal agencies, and undertaking research and development of activities related to development of nuclear power for civilian use." The purpose of this PEIS is to determine the environmental and other impacts to accomplishing this mission from all reasonable existing and new DOE resources. The FFTF at the Hanford Site was one of several existing DOE resources that was assessed for this mission.

Commentor No. 2025: Anonymous (Cont'd)

Response to Commentor No. 2025

Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. This would account for about 2,205 cubic meters of additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposal) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

Commentor No. 2026: Ris Yavoh/Chas Morbeck

9/11/2000
 (T) Morbeck
 3000 S Garfield St
 Kennewick WA 99337

Gentlemen

The United States needs
 to restart the F.F.T.F. it can
 create necessary isotopes to
 support new cancer treatment
 I understand we are now
 purchasing isotopes from Canada

Ris Yavoh
 Chas Morbeck

2026-1

Response to Commentor No. 2026

2026-1: DOE notes the commentor's support for Alternative 1, Restart FFTF. With respect to medical isotopes, the United States purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, supplies of many research isotopes are not readily available from foreign (or existing domestic) sources, causing a number of medical research programs to be terminated deferred, or seriously delayed. Under the NI PEIS proposed action, DOE would enhance its existing nuclear facility infrastructure to more effectively support production of radioisotopes for medical applications and research.

Commentor No. 2027: W. P. Mead
Public Safety Resources Agency

(A)

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

September 8, 2000

Ms. Colette E. Brown, NE-50
Office of Nuclear Energy,
Science and Technology
U. S. Department of Energy
19901 Germantown Road
Germantown, MD 20874

RE: Draft Nuclear Infrastructure PEIS.

Dear Ms. Brown:

During my oral comments at the Department's Hearing of August 29, 2000 in Portland, Oregon, the Moderator notified me that I had reached the five minute time limit for public comments. I showed the Moderator my written notes and stated that I was at my final paragraph, to which he nodded his head and stated "Okay," but then ordered the sound technician to cut the power to the microphone when I began my final paragraph by describing how to explain something to an incorrigible teenager.

I want to be sure that my comments are fully recorded in the official record, so I'll repeat what the Department's Moderator, who was at that time acting under your personal supervision, did not want the public to hear during the hearing. Just to ensure that there is no "inadvertent" censorship, I'll increase the size of the font so the Department's scanners can easily digest it before the electronic analysis program discards it.

Also, because your attention was lacking during the hearing (you may recall that several speakers had to ask someone to get your attention when they were talking to you), please be sure to do what the sound technician stated you would do: Listen to the tapes of the entire session at Portland to learn what we were trying to say to you when you were supposed to have been listening to us.

Response to Commentor No. 2027

*Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency*

"We have a clear message for the Department, and we'll state it as we would to an incorrigible teenager:

WE support you financially:

WE pay your bills, and
WE buy you your toys.

YOU acted inappropriately:

YOU lied to us when we asked you to tell us the truth, and

YOU didn't keep your promises when you said that you would clean up Hanford.

You have betrayed our trust.
And for that,

YOU ARE GROUNDED!

(And you can't go out and play with the reactor until AFTER you have cleaned up your mess!)



2027-1

Response to Commentor No. 2027

2027-1: DOE notes the commentor's opposition to FFTF restart.

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

Specific Comments Regarding the Draft PEIS:

1. Failure to include studies by NGOs in the Draft PEIS if they contradicted a "pro" FTFF-restart position:

It should be noted that during the public hearings that were held in Portland in 1999, again under your personal direction, that you allowed representatives of public health and safety NGOs ten minutes to present their testimony. This was changed to five minutes this year.

Although the reason that was cited for this change was to allow everyone to speak, we believe it was because we didn't support the Department's plan to restart the FTFF at the expense of cleaning up Hanford's environmental, health and safety hazards from the past half century of weapons production activities.

I state this because we were restricted in our attempts to enter information into the record at the public hearings where other persons could interact and expand on our information, and also because the documentation that we presented during the previous rounds of hearings was not included in the Draft PEIS.

Studies by pro-nuclear industry organizations who agreed with the Department's alleged "need" to restart FTFF were included, but reports that countered the industry's pro-restart position were not even mentioned. The public should have been allowed to see our information so it could be further studied by independent analysts in time for this round of the process.

A better option would have been to schedule two nights of public hearings in major cities. The Draft PEIS stated that Portland and Hood River, Oregon each had more than 300 persons attend last year's hearings - more than at any other location, including the Tri-Cities and Seattle, Washington - but you did not allow sufficient time for the public to be heard. Better planning could have provided that opportunity and increase the public's respect for the integrity of the process.

2. Flawed Methodology - Citing supporting documents that were previously acknowledged to be inaccurate:

FTFF's adjunct facilities were listed in the Draft PEIS as if they were virtually ready to be used in a supporting role if the FTFF was restarted. This assumption was based on a 1988 inspection report that, in a 1989 review, was found to be defective; yet the Department's Draft PEIS indicates that its decision would be based on the (flawed) 1988 report. 

2027-2

2027-3

Response to Commentor No. 2027

2027-2: DOE policy encourages effective public participation in its decision making process. In compliance with NEPA and CEQ regulations, DOE provided opportunity to the public to comment on the scope of the NI PEIS and the environmental impact analysis of DOE's proposed alternatives. DOE gave equal consideration to all comments. In preparing the Final NI PEIS, DOE carefully considered comments received from the public.

The public hearing format was designed to be fair and unbiased. The public hearing format used was based on stakeholder input and was presented in the Notice of Availability (65 FR 46443 et seq.) for the Draft NI PEIS. This format was intended to encourage public participation, regardless of the motivation for attending the hearing. It provided an opportunity for the participants to meet one another, exchange information, and share concerns with DOE personnel available throughout the course of each hearing to answer questions. The meetings were facilitated by an independent moderator to ensure that all persons wishing to speak had an opportunity to do so. Persons wishing to comment were selected at random from the audiences rather than according to the order in which they registered. This was accomplished by a random number drawing. In addition to the comment recorder stationed at the main hearing, a second recorder was available in an adjacent room to receive comments without the need to await selection at the main proceeding. The hearing format used promoted open and equal representation by all individuals and groups.

2027-3: One of the adjunct facilities for FTFF under Alternative 1, Restart FTFF, is the Fuel and Materials Examination Facility, FMEF, which was built during the late 1970s and early 1980s for the breeder reactor technology development program on the Hanford Site. Although FMEF has never been used, it has been maintained in a condition suitable for a future mission. Use of FMEF would require the construction of a new 76-meter (250-foot) emissions stack (See Section 4.3.3). The earliest that FMEF would be used under any of the alternatives described in this PEIS is FY 2005. This is adequate time for any modifications or upgrades to the facility to be made to ensure that it can be operated in a safe and environmentally sound manner.

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

This entire area of the Draft PEIS should be reviewed and any decision about restarting FFTF in any role should be re-analyzed only after a new inspection audit of the adjunct facilities has been completed and reviewed by the public, including a new round of hearings, as was done for the possibility of restarting FFTF when the Department used the flawed 1988 inspection report to support that alternative.

2027-3
(Cont'd)

3. Financial Analysis - Inaccurate assumptions and misleading FFTF decommissioning costs in non-FFTF alternatives:

The entire aspect of the Department's timing and presentation of its Financial Analysis is suspect. The Draft PEIS was released without any responsible cost analysis for the Alternatives, however the public was expected to make a responsible decision.

No one of sound mind would agree to a major expenditure without knowing the ultimate cost of the purchase, but apparently the Department now has a new definition of a "non-disclosure agreement" with the public. The public and NGOs should have been able to analyze the relative costs of the Alternatives as a part of the original document.

Releasing the cost analysis as an "after market" add-on (I received it after I had completed my testimony at the hearing in Portland, Oregon) can only lead to increased confusion among the participants. If the financial information was not available at the time the Draft PEIS was to be printed, then the document should have been postponed until the entire record had been assembled in a single package.

FFTF's decommissioning costs should be restricted to only those alternatives that postulate restarting FFTF (Alternative 1) or decommissioning FFTF (Alternative 5). FFTF's decommissioning costs should not be included in the financial impact statements of the other proposed alternatives.

These are entirely separate issues and should be treated as such. Instead, the Department under-estimated the actual cost of FFTF's restart in Alternative 1, while completely ignoring any costs for decommissioning FFTF after it completed its role.

This provided a false impression that Alternative 1 would be financially attractive. This variation of the "bait-and-switch" scheme was compounded by including FFTF's decommissioning costs in the other Alternatives. One may logically question why any of those Alternatives, which should be analyzed independently, were blessed with FFTF's decommissioning costs, when Alternative 1 completely ignored that input. 

2027-4

2027-5

Response to Commentor No. 2027

2027-4: NEPA does not require the cost of alternatives to be included in an EIS, although cost will be a factor in the decision-making process. A separate Cost Report was prepared to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. The Cost Report was mailed to interested parties on August 24, 2000 and made available on the NE website (<http://www.nuclear.gov>) and in the public reading rooms. For information purposes, about 730 people were mailed the Cost Report. DOE has provided a summary of the Cost Report in Appendix P in this Final NI PEIS.

To provide interested parties with additional time to comment on the Draft NI PEIS, the deadline for transmittal of comments was extended from September 11, 2000, to September 18, 2000 (65 FR 46444). As stated in the Notice of Availability (65 FR 46443 et seq.), DOE considered comments submitted after the close of the comment period to the extent practicable.

2027-5: Decommissioning FFTF, including associated costs and cleanup, is not within the scope of the NI PEIS. Before decommission activities were undertaken, DOE would prepare the appropriate environmental documentation to address the associated environmental impacts. Cost assessments would also be prepared.

DOE remains committed to cleaning up the Hanford Site independent of ultimate decision on FFTF. The amounts of wastes associated with decommissioning FFTF would be small. The schedule for cleaning up these other wastes would not be affected if FFTF were restarted.

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

The logical questions arise: Is the Department's analysis so incompetent that it forgot that Alternative 1 will eventually require FFTF to be decommissioned, or are we to believe that they wrote the analysis with the assumption that the only way slant the analysis was to add FFTF's decommissioning costs to the base price of the other Alternatives in order to adversely influence the selection process against those alternatives, and in favor of restarting FFTF, per Alternative 1.

The cost analysis for the construction and operation of new accelerators to produce isotopes if FFTF is not selected for that mission should stand on their own merits. FFTF's decommissioning costs should not be included in those alternatives, but should instead be limited to Alternatives 1 and 5.

FFTF's decommissioning costs were not fully addressed in the cost analysis for restarting FFTF (Alternative 1). FFTF will require decommissioning costs regardless of when it completes its role within the nuclear infrastructure.

At best, the sooner that we decommission FFTF, the less it will cost. If Alternative 1 is selected, we can be assured that the decommissioning costs will increase exponentially by the time that its postulated mission is completed after another 35 years of service.

In 1998 I examined several "decommissioned" reactor sites that were much smaller and had produced much less contamination than FFTF has to date. In each of those cases, the utility that owned and operated the reactor had experienced much-higher costs than had been projected for decommissioning the reactor, with several subsequent expenditures for environmental remediation years after the facilities had closed. Those expenditures then had to be paid for from the utilities operating budgets for other projects.

In FFTF's case, based on the Department's historic emphasis on "production" missions, and its inability to even comply with its current binding cleanup and environmental remediation agreements, we would be highly skeptical of any assurances the Department gives in this matter. I am sure that others will include this discussion in their comments.

4. Failure to adequately advise the public on the environmental benefits of using accelerators instead of reactors to produce isotopes:

DOE's push to use a liquid-sodium-cooled reactor in an urban area is unconscionable. FFTF's predecessors have shown that such reactors can experience nuclear excursions even under the most rigid monitoring conditions and with safety standards in place. 

2027-5
(Cont'd)

2027-6

Response to Commentor No. 2027

2027-6: FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small. Prior to an FFTF restart, a revised safety analysis report and a probabilistic risk assessment would be prepared which would address any changes in plant configuration, operating conditions, and procedures. The revised safety analyses would be subjected to a thorough independent review process.

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

In my testimony of February 12, 1998, at Hood River, Oregon, I cited a history of nuclear accidents in FFTF's predecessor reactors. The cited accidents were nuclear in origin, and in several cases destroyed the reactor's core and resulted in the permanent closure of those reactors.

I also cited scientific studies that stated that beyond the issue of a nuclear excursion within the reactor's core, that an even greater possibility existed for an explosion of a much greater magnitude if the liquid sodium came in contact with air or water: EBR-2's design was postulated for a maximum release equivalent to 300 pounds of TNT for the nuclear excursion; but the same design postulated that the chemical reaction of a sodium-air explosion could reach an explosive force equal to 10,000 pounds of TNT!

FFTF was built in the 1970s and has many of the design flaws of its predecessors. The litany of sodium-cooled reactors that have been catastrophically destroyed in the United States is legend: EBR-1 had an accidental core meltdown; EBR-2 was shut down in mid-cycle because it became unstable and the remainder of its tests could not be safely conducted.

In addition to EBR-1 and EBR-2, the SRE liquid-sodium-cooled reactor and the Fermi-1 reactor both experienced catastrophic core destruction that caused both facilities to be permanently shut down.

Fermi-1 was less than half the size of FFTF, yet its accident threatened the public to such an extent that for nearly an entire month the Atomic Energy Commission seriously considered evacuating 1.5 million persons who lived near it. FFTF is much larger than Fermi-1 and much closer to a major metropolitan area that could not be evacuated in time to protect a significant portion of that public.

Sodium-cooled reactors are inherently unstable and are much more prone to accidents than LWRs of the Three Mile Island and Trojan variety. The liquid sodium is highly corrosive and these reactors experience a much greater neutron flux, operate at very high temperatures, and experience embrittlement even beyond what is commonly found in commercial LWRs of similar age.

Experience has shown that this type of reactor is an accident just waiting to happen. FFTF is a fast-neutron **experimental** breeder reactor that should be retired now instead of trying to retrofit it to run another 35 years of production missions that it was not designed for. FFTF cannot safely produce the quantities of nuclear products that the Draft PEIS postulates during the course of its dangerously-extended lifetime. *W.P.M.*

2027-6
(Cont'd)

Response to Commentor No. 2027

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Public Safety Resources Agency

Under Alternative 1, this threat to our safety would continue for another 35 years, after which the Department still has not included any specific plans or funding for decommissioning FFTF. This constitutes an irresponsible abuse of public trust, and is especially blatant in view that the Department has never honored its many promises to clean up the Hanford Reservation.

Alternative 3 would be a much better option to achieve similar production goals with a greatly reduced amount of waste while at the same time providing additional safety to the public.

5. Additional Production Capacity:

The Department has not satisfactorily demonstrated an actual need for additional isotopes for medical, industrial or use in space missions. NASA has recently changed its position on the need for additional Pu-238. This came after a review of the basis for the Department's announcement that NASA even needed to increase its supply of Pu-238. In fact, NASA didn't even know it was listed as a "needy agency" until after that information had been published in the Congressional Record.

Likewise, the Department's figures for the "need" for future medical isotopes are highly suspect. We have already proven that much of the perceived "need" can be obtained from domestic and foreign commercial vendors who can meet current and the projected future needs.

If a real need can be demonstrated for additional production capacity, then the Department should strongly consider building accelerators instead of relying on reactors.

Conclusion:

1. Decommission FFTF:

PSRA recommends that the Department select Alternative 5 with respect to FFTF's future role in the Nuclear Infrastructure. FFTF has exceeded its safety margin and we should decommission it now; before we experience a catastrophic accident with its incumbent harm to the public and the environment, and increased costs to mitigate the accident's damages.

The public cannot afford to rely on the Department's assurances with respect to health and safety issues. The Department has a thoroughly-documented history of placing a higher priority for "production" missions at the expense of operational safety. 

2027-6
(Cont'd)

2027-7

2027-8

2027-7

2027-9

2027-6

2027-10

Response to Commentor No. 2027

2027-7: DOE notes the commentor's support for Alternative 3, Construct New Accelerator(s) which includes permanent deactivation of FFTF, instead of relying on reactors.

2027-8: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual rate of growth of medical isotope use is consistent with the Expert Panel findings. Section 1.2.1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The conclusions presented in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 regarding the suitability of FFTF to produce research isotopes in a timely and cost efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FFTF for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of FFTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FFTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates the use of FFTF when coupled with the other missions. While some existing

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

This is an institutional mindset, as underscored by the recently-disclosed incidents of repeated violations of safety procedures, and the subsequent attempts to cover-up those violations at the Hanford Reservation.

The Department and its predecessor agencies have *for decades* tried to convince the public that Hanford is a safe place to work, that Hanford is a valuable asset to our region, and that its employees were one of the nation's healthiest workforces.

During the past sixteen years PSRA, other NGOs and non-DOE public agencies have challenged the Department's assumptions, but have been repeatedly been told that we should rely on the Department's own analysis of its history, and that *our* extrapolation of those results was flawed. When pressed for answers to specific questions, the Department often responded that the specific information we needed was classified, but that if we had been able to review that information, that we would have reached the same conclusions as the Department.

We now know that the Department has concealed an entire body of information regarding the health and safety of its workforce. PSRA finds it ironic that many of the Department's employees, who for decades were saying that Hanford was a healthy and safe place to work, are now filing claims subsequent to the Department's admission that working in their production areas have adversely impacted the health of their workforce: The very people who were publicly saying that public health professionals were wrong, are now lining up for financial compensation now that the government has offered to pay for damages.

To date, this "retroactive cognition" has only impacted a few thousand persons (not counting the financial impact on the taxpayers who are expected to pay for the damages now that the Department has decided to admit that for several decades it could not accurately quantify its own data), but that could rapidly change if FFTF were restarted.

A decision to restart FFTF would be another example of the Department making a series of other erroneous assumptions, but with a much greater potential for widespread danger to the general public, instead of being limited to a relatively small segment of the regional workforce.

We cannot justify passively agreeing with the position that "The Department knows best..." The Department's production operations have been so mis-managed that if they were forced to run under the regulatory authority of the NRC, most DOE facilities would have been closed and others probably might not even have been allowed to be built or operated after their first inspection. 

2027-10
(Cont'd)

2027-11

2027-10

Response to Commentor No. 2027

reactors may possess the potential capability or capacity to support research isotope production, as suggested in the NERAC report, it is unlikely that reliable, increased production of these isotopes to support projected needs could be accomplished without impacting the existing missions of these facilities.

DOE has taken the Expert Panel and NERAC report recommendations under consideration in developing the range of alternatives evaluated in the NI PEIS. These reports were made available to the public at the NI PEIS public information centers and on the Internet at www.nuclear.gov.

Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, DOE recognizes that any purchase beyond what is currently available to the United States through the existing contract would likely require negotiation of a new contract and may require additional NEPA review.

The May 22, 2000, correspondence from NASA to DOE identifies that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, SRTG development efforts were stopped in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires one-third less plutonium-238 as its fuel source. However, the Stirling technology is

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

The Department as an agency is in a chronic state of denial when it comes to the dangers of its operations. At Hanford, its history is one of a "cowboy mentality" about production methods when what is really needed is a more measured, analytical approach when dealing with the scientific principles that govern technical achievements: Working with nuclear processes that have a narrow safety margin of error require more of the type of approach taken by neurosurgeons, instead of playing the part of a rodeo clown.

For years the people of the Northwestern United States have heard Hanford's managers tell us how well they were doing in their efforts to clean up Hanford's environmental wastelands, yet we know that the Environmental Protection Agency has identified more than 1,000 potential "Superfund" chemical and/or radiologic sites within Hanford's boundaries, and that each of those sites will cost approximately \$100,000.00 just to characterize. Beyond that, the final remediation cost may reach \$100,000,000,000.00 and take another hundred years to complete, even though some areas of the Hanford Reservation will be closed for eternity.

We can't afford to grant the Department another chance to fail. In the event of a serious accident at FFTF or any of its adjunct facilities, a significant population of the region could be at risk. Data already exists that extrapolates an ever-increasing probability of such an accident happening at the FFTF if the Department restarts it for a 35-year production run.

If the Department is wrong in their safety assumptions, as we believe to be the case, it will be too late for the surrounding population: FFTF is too close to Richland and the surrounding Tri-Cities population centers to evacuate, given that the Department routinely needs several hours just to determine and understand that an accident really has occurred, that there were emergency procedures to be followed and notifications that it should have made.

Once the Department realizes that it has a response role, it then activates its resources to isolate workers from the public and assume a positive "spin-control" of the incident.

[Facetious Note in response to Ms. Brown's acknowledged facetious comment to Gerald Pollet at the Portland, Oregon Hearing: "Yes, that's true. But, on a positive note, those workers will never need to buy another flashlight or batteries during their lifetime."]

We don't need spin control: We need the Department to show more responsibility for its actions. 

2027-12

2027-6

2027-10

Response to Commentor No. 2027

developmental and NASA has requested in a September 22, 2000, letter to DOE that large RTGs be maintained as backup. Section 1.2.2 of Volume 1 was revised to clarify plutonium-238 mission needs.

The major mission of FFTF would not be the production of plutonium-238. Rather, all three missions are of equal importance; no one mission is given priority in the NI PEIS.

2027-9: DOE notes the commentor's support for Alternative 5.

2027-10: DOE notes the commentor's viewpoint. The FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

DOE disagrees with the commentor's assertion of quoted statement made by Colette Brown to Gerald Pollet at the Portland hearing. The Portland hearing transcripts as well as the Portland scoping meeting transcripts were searched and there is no record of such a statement.

2027-11: The commentor's position regarding the restart of FFTF is noted. This NI PEIS provides estimates of the incremental potential human health impacts associated with a range of reasonable alternatives (Alternative 1 includes the restart of FFTF) evaluated for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. The methodology provides results based upon our current knowledge of the health impact of low doses of ionizing radiation and hazardous chemicals. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of each of the analyzed alternatives, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with each of the alternatives and with restarting FFTF would be small.

2027-12: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing

Commentor No. 2027: W. P. Mead (Cont'd)
Public Safety Resources Agency

Accidents such as the 1976 Am-241 column explosion at the 242-Z Building that dosed Harold MacClusky; the case of the Z-9 Waste Crib that approached criticality similar to the Soviet Union's criticality explosion of the late-1950s; and the dismaying series of errors of the 1990s all show that the Department has not been able to safely manage projects where known control procedures were in place, but were not followed.

If the Department is wrong in its assessment of FFTF's safety, it will do no good for it to admit that mistake after hundreds or thousands of persons have been exposed, and more land has been contaminated.

We have no faith in the accuracy of the Department's projections because they were created by the Department's analysts who, by the very nature of their positions, have a conflict of interest in that they want FFTF to resume a production mission.

We have seen several recent examples of the fallacy of forcing a potentially-dangerous technical/scientific project to conform to an arbitrary political time-line: NASA's Challenger explosion and its two recent Mars missions are merely the latest well-known examples. The Department has put the FFTF restart on a similar fast-track, but this time the effects of the potential accident would be directly targeted on the Northwest's population.

The appropriate time for "damage control" is right now: The Department should permanently decommission FFTF and end the very real jeopardy to the region's health and safety. Admitting that the Department's analysis was wrong after an accident will do absolutely no good for victims; the appropriate time for action is now, and Alternative 5 is the only responsible course of action that the Department can justifiable pursue.

Instead of bragging about how well the Department will do in a project 35 years from now, we would rather that it demonstrate its ability to follow safety procedures that currently exist, and demonstrate that it has the technical ability and institutional commitment to comply with the remediation schedules that are already in place, and to which it has already agreed.

2. Review the actual "need" for new production capacity:

Accelerators offer several safety and environmental advantages over reactors. If additional isotope production capacity is truly needed, then PSRA recommends that the Department pursue Alternative 3 to the exclusion of restarting FFTF or building new research reactor(s).

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Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

2027-13: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual rate of growth of medical isotope use is consistent with the Expert Panel findings. Section 1.2.1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The conclusions presented in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 regarding the

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At the present time, PSRA cannot verify that an actual "need" for additional production capacity truly exists. We have several other domestic and foreign sources for the identified isotopes that can supply the cited quantities at a lower cost than the Department could achieve by either restarting FFTF or even by building two new accelerators per Alternative 3.

As with our comments regarding FFTF, we question the methodology of how the Department reached its conclusions that additional capacity was needed for the production of those isotopes. The studies appear to be flawed - or at the minimum, compromised - because they were produced by many of the organizations that have a vested financial interest in "creating" such a need.

Due to the Department's failure to include responsible studies that contradict its pre-determined position that additional production capacity is needed, the stated conclusion was a given. In reality, however, the Department's refusal to include data by recognized independent NGOs - including public health agencies - casts serious doubt on the validity of its assumptions about future needs in this area.

In this example, the Department should understand that just because it failed to include opposing data in its Draft PEIS does not mean that that body of knowledge will remain hidden. PSRA recommends that the Department revisit this question by reviewing the data that was submitted to it by NGOs that were not under contract to DOE, and then re-evaluate its analysis after including the full body of evidence.

3. Flawed methodology and administrative procedures have invalidated this version of the Draft PEIS:

The Public Hearing on the Draft PEIS was held on Tuesday, August 29, 2000, about ten months after the Department's last hearing in our area. We expected our comments to be included in the Draft, but the more than 700 unique comments that the Department received were dismissed in only four sentences.

The public did not receive the same treatment as was granted to the pro-FFTF restart community, which was allowed to include comments that had previously been proven to be false with respect to medical isotopes. Instead, the Department gave greater weight to information that was known to be false because that data was given in favor of restarting FFTF. ~~to~~

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suitability of FFTF to produce research isotopes in a timely and cost efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FFTF for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of FFTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FFTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates the use of FFTF when coupled with the other missions. While some existing reactors may possess the potential capability or capacity to support research isotope production, as suggested in the NERAC report, it is unlikely that reliable, increased production of these isotopes to support projected needs could be accomplished without impacting the existing missions of these facilities.

DOE has taken the Expert Panel and NERAC report recommendations under consideration in developing the range of alternatives evaluated in the NI PEIS. These reports were made available to the public at the NI PEIS public information centers and on the Internet at www.nuclear.gov.

2027-14: DOE notes the commentor's views and concerns regarding response to public scoping comments and the preparation of the NI PEIS. It is DOE policy to encourage public input on matters of regional, national and international importance as part of its commitment to facilitate a public participation process that is open and unbiased. In compliance with NEPA and CEQ regulations, DOE provided opportunity to the public to comment on the scope of the NI PEIS and the environmental impact analysis of DOE's proposed alternatives. DOE gave equal consideration to all comments. In preparing the Final NI PEIS, DOE carefully considered comments received from the public.

While all comments received during the scoping periods for both the Plutonium-238 Production EIS and the NI PEIS are part of the

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Public Safety Resources Agency

The Department had nearly an entire year to produce this Draft PEIS and could have delayed even more if they needed more time to produce a completed document that included the information that the public needed in order to reach an intelligent decision.

Instead, they produced an incompetent collection of selected data to support their intent to restart FFTF, and guaranteed that the public could not responsibly analyze it because the Department failed to include two important components of the Draft: The cost analysis for the different Alternatives; and the analysis of the Nonproliferation Impact Assessment.

The *Cost Report for Alternatives* was transmitted with a cover letter dated August 24, 2000, but was not mailed to PSRA until August 29, 2000; the date of the hearing in Portland, Oregon.

The *Nuclear Infrastructure Nonproliferation Impact Assessment* was transmitted with a cover letter dated August 30, 2000, but was not mailed to PSRA until September 8, 2000. This meant that the Department did not release that information until after the date of the hearing in Portland, Oregon, and then with-held mailing the Assessment for another nine days.

Given that the Department apparently can't even manage a timeline that it established internally, and then can't even mail its own documents within a week of their release, we do not believe that it has satisfactorily demonstrated its ability to safely operate the FFTF reactor (which is much more technically complex than the DOE's postage meter machine).

We find it interesting to note that the Department has set an arbitrary time limit of when it will stop accepting response comments from the public, but that it failed to provide the data needed by the public to prepare those comments in a timely manner. A much better solution would have been to delay the distribution of the Draft until all data, including the Cost Report and the Impact Assessment and pertinent comments from non-FFTF restart contributors, had been compiled and then submit it as a single document with several included appendices.

The logical progression here would be to expect that the Department will next discard all public comments because they did not consider the Cost Report and/or Impact Assessment: A challenge by the Department on those grounds would be virtually unassailable because of the Department's own actions of delaying the needed information instead of including it in the report as a single package. *WPM*

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Administrative Record for the NI PEIS, Section 1.4 of Volume 1 and Appendix N are intended to provide a summary of the issues and associated trends identified during the scoping process rather than a tabulation of comments by specific issue. It should be noted, however, that NEPA and CEQ regulations do not require an agency to include and respond to each scoping comment as is required for public comments on a Draft EIS. In preparing the NI PEIS, DOE carefully considered scoping comments received from the public. Any perceived discrepancy in the grouping of comments raising any one particular issue or set of issues is attributable to the manner in which they were originally categorized and counted. For example, a number of statements, letters, or resolutions signed by multiple persons, such as city council resolutions mentioned by the commentor, were received by DOE (both for and against FFTF restart) in response to the request for scoping comments. Each such comment document was considered and counted as a single comment in the NI PEIS comment tracking system. The Office of Nuclear Energy, Science and Technology works closely with the Office of the Secretary to keep him informed of the progress on the NI PEIS, including stakeholder input.

This NI PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR Parts 1500 through 1508 and 10 CFR Part 1021), respectively. The environmental impacts of reasonable alternatives to fulfill the requirements of the missions were disclosed and evaluated in the NI PEIS. Further, DOE evaluated each environmental resource area in a consistent, unbiased manner across all the alternatives to allow a fair comparison among the various alternatives. DOE made every effort to obtain, analyze, and disclose all required information to make a decision on expanding nuclear infrastructure.

CEQ (40 CFR 1500 et seq.) and DOE (10 CFR Part 1021) implementation regulations do not require inclusion of cost and nonproliferation studies in an environmental impact statement. The basic purpose of the NI PEIS is to describe the alternatives under consideration for implementation (Section 2.5 of Volume 1) and the environmental impacts that would occur if these alternatives were implemented (Chapter 4 of Volume 1). Pursuant to CEQ regulations (40 CFR 1505.1(e)), agencies are encouraged to make ancillary decision documents available to the public before a decision is made. The

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In short, PSRA believes that the current version of the Draft PEIS is fatally flawed in both its accuracy and methodology, and we request that the process be reviewed and - if necessary - that a new round of public hearing be held to consider the new data.



W. P. Mead
Director, PSRA
Portland, Oregon

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associated cost report and nonproliferation report were made available to the public on August 24, 2000 and September 8, 2000, respectively. DOE mailed these documents to approximately 730 interested parties, and these reports were made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in public reading rooms.

The public comment period for the NI PEIS was not arbitrarily set as stated by the commentor. The Council on Environmental Quality's (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR 1506.10(c)) require that a minimum of 45 days be allowed for public comment on the Draft NI PEIS. As stated in the Notice of Availability (65 FR 46443 et seq.), the public comment period began on July 28, 2000 and continued to September 18, 2000. In preparing the Final PEIS, DOE has assessed and considered both oral and written comments received on the Draft PEIS during the public comment period and has responded to these comments in the Final PEIS. Volume 3 of the NI PEIS contains public comments received on the NI PEIS and DOE responses to those comments. Moreover, late comments were considered to the extent practicable.

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Public Safety Resources Agency

(B)

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

August 29, 2000

USDOE Draft PEIS Hearing
 (Verbal Comments Specific To FFTF-related Concerns.)

I'll submit our specific comments by mail as I normally do, but for the purposes of this hearing, I really have to congratulate the Department of Energy on the quality of their work in crafting a document to justify the continued existence of the FFTF Reactor, a reactor that has been in search of a mission for the past decade.

The quantity of maps, tables, diagrams and appendices in the Draft PEIS are all skewed in favor of supporting the Department's pre-determined decision to restart the FFTF regardless of that reactor's actual need within the Nuclear Infrastructure.

In fact, this Draft PEIS included so many exhibits that I fully expected to see the "26 8x10 color glossy photographs with circles, arrows, diagrams, and a paragraph on the back" that Arlo Guthrie told us about in Alice's Restaurant.

However, one thing that I failed to see was any competent discussion or citation of the thousands of specific comments that were made by citizens like us at these hearings, or even by tax-exempt professional public health and safety organizations in their written comments to the Department of Energy.

What I did see were citations of studies by nuclear industry organizations that favored FFTF's restart because they had a financial incentive to divert funding from Hanford's cleanup operations, to return to another 35 years of nuclear waste production and its' associated risks to our populations.

The package of documents I reviewed totaled 1,214 pages, weighed 6 pounds, and cost \$10.00 to ship to me via USPS Priority Mail. Hundreds of other persons, libraries, businesses and public service organizations received these, but no one was able to review any of the thousands of comments that had been made by individuals or organizations who opposed the FFTF's restart.

The Department cited "favorable" comments made by pro-nuclear groups in exhaustive detail, but dismissed our concerns even though the Department's own Draft PEIS identified Portland and Hood River as having the two highest levels of attendance of the 

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2027-15: While all comments received during the scoping periods for both the Plutonium-238 Production EIS and the NI PEIS are part of the Administrative Record for the NI PEIS, Section 1.4 of Volume 1 and Appendix N are intended to provide a summary of the issues and associated trends identified during the scoping process rather than a tabulation of comments by specific issue. It should be noted, however, that NEPA and CEQ regulations do not require an agency to include and respond to each scoping comment as is required for public comments on a Draft EIS. In preparing the NI PEIS, DOE carefully considered scoping comments received from the public. Any perceived discrepancy in the grouping of comments raising any one particular issue or set of issues is attributable to the manner in which they were originally categorized and counted. For example, a number of statements, letters, or resolutions signed by multiple persons, such as city council resolutions mentioned by the commentor, were received by DOE (both for and against FFTF restart) in response to the request for scoping comments. Each such comment document was considered and counted as a single comment in the NI PEIS comment tracking system. The Office of Nuclear Energy, Science and Technology works closely with the Office of the Secretary to keep him informed of the progress on the NI PEIS, including stakeholder input.

The public hearing format was designed to be fair and unbiased. The public hearing format used was based on stakeholder input and was presented in the Notice of Availability (65 FR 46443 et seq.) for the Draft NI PEIS. This format was intended to encourage public participation, regardless of the motivation for attending the hearing. It provided an opportunity for the participants to meet one another, exchange information, and share concerns with DOE personnel available throughout the course of each hearing to answer questions. The meetings were

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ten Scoping Meetings that were held in the United States in 1998 and 1999 [Vol-2; Table N-1]. The Department acknowledged receiving "more than 700 unique comments" but dismissed them in four sentences of the Draft PEIS.

At other DOE public hearings I've often heard speakers say that the citizens of Portland must understand that nuclear production issues are really a matter of national security, and that we must take the long view of what's good for the country, instead of simply concentrating on what's good for our region. I noticed that many of those speakers were "Three Hour Immigrants" who had been bussed into Portland from the Tri-Cities to pack our hearing and then return to their jobs at Hanford; I saw them get off the bus, they wore their union hats and jackets while they testified, and I watched them get back onto the bus to return to Richland.

Why not take another, untarnished, view of true National Security instead of buying into the company line? True "National Security" is the ability to provide a safe and healthy environment in which to live. We have a horrendous health and safety problem at Hanford. Let's clean that up and then bring the rest of the Department's sites and the rest of the United States up to the standard of living that we have a right to expect in the Northwest.

We all know that the Columbia River flows through Hanford. That's the water that we drink. We use it to irrigate our crops, prepare our food, and wash our clothes and dishes. It's a National Treasure that we can't afford to contaminate, yet we have in the name of "National Security."

The people of Valemount, British Columbia at the northern reach of the Columbia near Jasper National Park could not imagine what we've done to their river. Nor could the people of Canal Flats, 180 miles to the south where the river actually begins after it makes it's U-turn around the Selkirk Mountains to its headwaters in a beautiful area of the Canadian Rockies.

What they could believe, though, is that once again an industry with a vested financial interest has bought the support of a government at the expense of the region's residents.

In the 1880s the people of Montana and Southern British Columbia dug a canal that was less than a mile long to join the Columbia and the Kootenai Rivers. The Canadian Pacific Railroad, a private corporation that had a government-issued transportation monopoly at that time, had the Canadian Government close the canal after only two boats had made the transit.

This is not really much different from what's happening today with Hanford: The nuclear industry wants to protect its jobs at

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facilitated by an independent moderator to ensure that all persons wishing to speak had an opportunity to do so. Persons wishing to comment were selected at random from the audiences rather than according to the order in which they registered. This was accomplished by a random number drawing. In addition to the comment recorder stationed at the main hearing, a second recorder was available in an adjacent room to receive comments without the need to await selection at the main proceeding. The hearing format used promoted open and equal representation by all individuals and groups.

2027-16: DOE notes the commentor's opinions and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. FFTF restart would not impact the schedule or available funding for existing cleanup activities.

The U.S. Congress funds the Hanford cleanup through the Office of the Assistant Secretary for Environmental Management (EM), and the FFTF through the Office of Nuclear Energy, Science and Technology (NE). The nuclear infrastructure missions described in Section 1.2 of Volume 1 would also be funded by NE, which has no funding connection to Hanford cleanup activities. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

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the taxpayer's expense and the Department of Energy is a willing partner in destroying the slight chance we have of cleaning up their mess.

An example will underscore just how incestuous this relationship is: FFTF is a federally-owned reactor on a federal enclave, but in an internet search on "fftf" you will find the following statement:

"Fast Flux Test Facility (FFTF) - Welcome. This is the official website of the Fast Flux Test Facility (FFTF), the U.S. Department of Energy's 400-megawatt test reactor."

Again, this is a DOE-owned reactor on a federal reservation, but the official URL is "http://www.fftf.org" -- not ".gov."

".Org for "Organization," not ".gov" for "Government" as is standard practice. By this time next year both FFTF and DOE will have a common URL: ".Com" for "Commercial" and the people of the NorthWest will qualify for ".WBH" for "We've Been Had."

FFTF's site has links to five private nuclear medicine sites, and ten links to sites such as the "Nuclear Energy Institute" and "NucNet," but it has no links to any of the public interest organizations here or even to the State of Oregon's Office of Energy.

The Department of Energy is very quick to state that no funding will be diverted from cleanup actions at Hanford, regardless of the decision to restart the FFTF reactor or any of their other facilities.

This is absolutely false.

The Department has diverted more than a hundred million dollars of cleanup funding just to keep the FFTF reactor in Standby status while they fabricate a "need" to restart it.

The truth at Hanford is that the Department of Energy and its contractors have never accomplished a single Environmental Health and Safety remediation project within their announced budget and time frame, not even when the Department's internal "peer review" process underscored the importance of achieving those goals.

The Department's predecessor agencies began creating waste at Hanford in the early 1940s. Forty-five years later I heard a DOE Manager testify that he was very proud of their record of solidifying tank wastes, and he cited an example of the previous year's accomplishments. What he failed to mention, however, was that the entire year's project actually solidified less than a 

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single day's production of liquid high-level radioactive wastes from Hanford's operations at the time of his testimony.

The Department should address the real issue of National Security as it relates to Hanford's production operations: That is, it must provide for the security of future generations here on earth instead of inventing a reason to pollute space. NASA didn't even know that the Department had decided it needed more Plutonium-238 for space missions until it was published in the Federal Register on September 15, 1999.

When Ms. Colette Brown, the Department's person who is managing this PEIS process, was questioned about this on October 19, 1999, she never answered the question she had been asked about whether NASA had requested additional Plutonium-238 beyond what was currently available for the three cited missions.

What is really needed is a national commitment to clean up the wastes that we've already created at Hanford, which has been identified as having approximately 1,000 separate areas of radiological and chemical contamination that qualify for the EPA's Superfund cleanup status.

We have a 55-year history of waste production at Hanford and we have not been able to contain, manage or isolate that waste even when using "State-of-the-Art" technology. If we can't clean up the present mess, how can we possibly justify creating even more waste when we will need to contain, manage and isolate that legacy from our descendants for the next 10,000 years?

In 1985, while testifying at another DOE Hearing, I presented a timeline showing the accepted 10-half-lives decay chain of Hanford's radiologic contamination to put this argument into an understandable perspective. At the rate of 1 inch per 100 years, that timeline - which was produced on a roll of paper towels - was 125 feet long and, when un-rolled, stretched down an entire aisle of the Bonneville Power Administration's Auditorium.

Make no mistake about it, the Department's Draft PEIS was written with one objective: to justify the restart of Hanford's FFTF Reactor as the core component of a new generation of nuclear production operations. Much of the materials that would be produced or irradiated at Hanford would require shipments of several thousand miles each way from their initial storage areas to this reactor - which really is not a good candidate for those types of operations - and then back to the east coast for processing before they could be shipped to the end user somewhere else in the United States.

Regardless of how you cook the books, restarting the FFTF Reactor cannot be justified on the basis of economic, social, medical, 

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2027-17: Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, DOE recognizes that any purchase beyond what is currently available to the United States through the existing contract would likely require negotiation of a new contract and may require additional NEPA review.

The May 22, 2000, correspondence from NASA to DOE identifies that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, SRTG development efforts were stopped in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires one-third less plutonium-238 as its fuel source. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000, letter to DOE that large RTGs be maintained as backup. Section 1.2.2 of Volume 1 was revised to clarify plutonium-238 mission needs.

The major mission of FFTF would not be the production of plutonium-238. Rather, all three missions are of equal importance; no one mission is given priority in the NI PEIS.

NASA was informed about the preparation of the NI PEIS and received the Draft NI PEIS for review.

Commentor No. 2027: W. P. Mead (Cont'd)
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environmental, transportation, health, safety or national security arguments. It's the wrong type of reactor to use in many of the postulated roles. The only reason FFTF is being considered is because it is already at Hanford and the nuclear industry wants to create jobs at that site.

I'm all in favor of putting those folks back to work, but it's time for the DOE to accept its responsibility for Hanford's waste.

We have a clear message for the Department:

WE support you financially:

WE pay your bills and WE buy you your toys.

YOU broke those toys and acted inappropriately:

YOU lied when we asked you to tell us the truth, and YOU didn't keep your promises when you said that you would clean up Hanford.

You have betrayed our trust and for that,

YOU ARE GROUNDED!

And you can't go out and play with the reactor until AFTER you have cleaned up your mess!

W.P. Mead
 DIRECTOR, PSRA
 PORTLAND, OR.

Response to Commentor No. 2027

2027-18: See response 2027-16.

2027-19: The NI PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). In the NI PEIS, DOE has analyzed each environmental resource area in a consistent, unbiased manner across all the alternatives to allow for a fair comparison among the various alternatives.

2027-20: While there are differences in the total shipping distances and risks among the alternatives, risks from transportation are small for all of the alternatives. Figures and tables in Section 2.7.1.6 of Volume 1 summarize transportation risks and provide comparisons of transportation risks among alternatives and among options within alternatives. Transportation risk is only one factor in DOE's decision. Accordingly, DOE has identified its preferred alternative in Section 2.8 of Volume 1 and included a discussion of DOE's reasons for selecting it.

Commentor No. 2028: J.F. and Dorothy Scheppke

NI PEIS Toll_Free Telephone

9/21/00

J.F. and Dorothy Scheppke
909 147th Place
Bellevue, Washington 98007

Yes, I would like to tell you about the FFTF, here in Washington state. My wife and I are both against this policy of the re_start. Our names are J.F. and Dorothy Scheppke, 909 147th Place NE, Bellevue, Washington 98007. Thank you.

|| 2028-1

Response to Commentor No. 2028

2028-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 2029: Tom Clements
Nuclear Control Institute

From: Tom Clements[SMTP:CLEMENTS@NCI.ORG]
 Sent: Thursday, September 21, 2000 1:09:33 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: PEIS submission
 Auto forwarded by a Rule

To Whom it Concerns:

Although past the official closing time for comments, I request that you accept the following for the record of the PEIS on isotope production/FFTF restart. I mentioned this issue in my comments submitted on September 18, 2000 but also would like that the news release on use of the Annular Core Research Reactor be included in the record and that the contents of the news release be addressed in the final PEIS.

Tom Clements
 Nuclear Control Institute

September 27, 1996
 It's official: Sandia will produce moly_99 at ACRR

First radiopharmaceutical samples to be generated next year
 By John German, Lab News Staff
http://www.sandia.gov/LabNews/LN09_27_96/acrr.html

Sometime next year, a US hospital likely will use the first batch of medical radioisotopes produced at Sandia to treat or diagnose a patient with cancer.

DOE issued its Record of Decision Sept. 11 to make Sandia the sole US producer of molybdenum-99, one of nuclear medicine's most widely used radioisotopes. The Labs' Annular Core Research Reactor (ACRR) in Area 5, where the moly-99 is to be manufactured, may be called upon to produce other radiopharmaceuticals as well, including iodine-125, iodine-131, and xenon-133.

2029-1

Response to Commentor No. 2029

2029-1: DOE notes the commentor's views. As discussed in Section 1.7 of the NI PEIS, the "Final Environmental Impact Statement, Medical Isotopes Production Project: Molybdenum-99 and Related Isotopes" analyzed the proposed establishment of a domestic capability to produce molybdenum-99 and related medical isotopes such as iodine-131, xenon-133, and iodine-125. At the time this review was conducted, the U.S. supply of molybdenum-99 depended on the production capacity of one aging reactor in Canada, so DOE proposed this action to ensure a reliable domestic source for this vital isotope. The range of reasonable alternatives evaluated in this EIS included facilities at SNL, LANL, ORNL, and INEEL. In the subsequent Record of Decision, DOE selected the ACRR and the Hot Cell Facility at SNL for the production of molybdenum-99 and the related isotopes, with target fabrication to be conducted at LANL. However, since that time, the diversity and reliability of world supply of molybdenum-99 have increased. DOE has determined that, because the vulnerability in supplies of molybdenum-99 has sufficiently diminished, the selected SNL facilities should be further developed for molybdenum-99 production using private funds. Negotiations toward that end are ongoing. Until an agreement is reached, the reactor and hot cell facilities are available for emergency molybdenum-99 production should the need arise. The reactor is also being used for the production of other isotopes, for example iodine-125, and has been made available on a services basis to serve defense missions. As such, the ACRR is currently configured to support DOE Office of Defense Programs pulse testing missions. This configuration is compatible with reactor operations for the production of isotopes.

Commentor No. 2029: Tom Clements (Cont'd)
Nuclear Control Institute

PRODUCTION SITE _ Jeff Wemple of Isotope Project and Compliance Initiatives Dept. 9361 peers toward the "hot cell" of the ACRR where targets are placed for irradiation. To make molybdenum_99, sealed target tubes coated on the inside with uranium_235 are placed in the reactor's hot cell and irradiated for several days. (Photography by Randy Montoya) </italic>

The decision culminates a two_year selection process that began in September 1994 when DOE announced it intended to consider the ACRR as a potential site for medical radioisotope production. At that time, DOE began studying the ACRR and three alternative facilities __ at Oak Ridge National Laboratory, Idaho National Engineering Laboratory, and Los Alamos National Laboratory __ as possible production sites, with the ACRR being its "preferred site."

"I am pleased that this important work will be done at Sandia," said US Sen. Pete Domenici (R_N.M.). "Moly_99 is essential to modern medicine, and the United States was facing a crisis by relying on foreign sources that were becoming increasingly unreliable."

DOE completed its NEPA (National Environmental Policy Act) assessment, including a full Environmental Impact Statement (EIS) of the ACRR, this May to ensure that planned production operations at Sandia would comply with all applicable environmental regulations. The announcement naming the ACRR as the selected facility followed a required post_NEPA_assessment public comment period.

The Record of Decision also names Los Alamos National Laboratory to fabricate the special targets necessary for moly_99 production.

Domestic supply critical

In the US, at least 40,000 diagnostic and therapeutic medical procedures each day, and nearly 100 million laboratory tests each year, require the use of medical radioisotopes such as moly_99.

Response to Commentor No. 2029

Commentor No. 2029: Tom Clements (Cont'd)
Nuclear Control Institute

The radioisotope has not been produced in the US since 1989, partly because of the complex regulatory environment and costs associated with reactor operations.

Currently, the entire US supply of moly_99 comes from a reactor in Canada operated by Canada's Atomic Energy Commission Limited (AECL), which produces about 90 percent of the world's medically important radioisotopes. The 1950s_era reactor may be nearing the end of its productive life, however, and no backup reactor is yet being built. (There are tentative plans to construct a new Canadian reactor for this purpose.)

Because medical radioisotopes decay rapidly (moly_99 has a half_life of 67 hours), their supply must continually be replenished. (See "Radioactive isotopes for medicine" below.) US radiopharmaceutical companies contend that a two_week interruption in production would bring most US nuclear medicine to a standstill. In 1990, Congress requested that DOE develop a reliable domestic source of moly_99.

Sandia's ACRR was selected for several reasons, says Dick Coats (9360), medical radioisotopes program manager, including the Labs' 30 years of experience designing and operating nuclear reactors and its ability to operate the reactor continuously. (See "ACPR to ACRR __ a brief history" below.)

ACRR conversion underway

To make moly_99, the targets __ sealed stainless steel tubes coated on the inside with uranium_235 __ will be placed in the reactor, where each will be irradiated for several days. As many as 37 targets can be placed in the reactor at one time. A few targets will be added and removed each day.

After a cooling period, each target will be loaded into a cask and transported to Sandia's Hot Cell Facility. The target will be opened inside a containment area, gases bled off, and an acid solution

Response to Commentor No. 2029

Commentor No. 2029: Tom Clements (Cont'd)
Nuclear Control Institute

added to dissolve uranium and other fission products. For each target, as much as 800 curies of moly_99 will be precipitated from solution.

After purification, the moly_99 will be shipped by commercial aircraft to medical suppliers. Small quantities of unwanted fission byproducts will be solidified in concrete to prevent leaching. The concrete will be placed in drums for disposal at the Nevada Test Site.

Modifications to the ACRR for radioisotope production will include removal of a tube in the center of the reactor now used for dry irradiation space and addition of a grid for irradiating targets. The first moly_99 samples produced at Sandia are scheduled to be delivered early next year to the Food and Drug Administration (FDA) for testing. The Labs hopes to begin shipping quantities of FDA_approved moly_99 to pharmaceutical companies by late next year.

Radioisotopes produced in the ACRR will be sold by DOE to suppliers at prices comparable to market prices. Initially, revenues received by DOE will only partially offset the cost of production. Later, however, any profits gleaned from improved efficiency or market growth will go directly to the US Treasury. Production eventually could be transferred to private industry.

Radioactive isotopes for medicine

Medical radioisotopes are unstable chemical elements that decay rapidly to relatively stable forms by emitting radiation. Their relatively short lifetimes make them useful for treating and diagnosing patients while minimizing their radiation doses.

The primary medical radioisotope that will be produced at Sandia is molybdenum99. Moly_99 is the precursor, or "parent," of technetium_99m, one of nuclear medicine's most widely used radioisotopes.

Response to Commentor No. 2029

Commentor No. 2029: Tom Clements (Cont'd)
Nuclear Control Institute

Hospitals typically receive quantities of moly_99, which decays in a matter of days to become technetium (moly_99 has a half_life of 67 hours).

Because technetium emits a unique and easily detectable form of radiation, hospitals use specially designed dyes and other technetium_containing substances (injected or ingested into a patient's bloodstream or tissues) to create images of internal organs or other areas of the body. Technetium_99's six_hour half_life means it disappears rapidly from a patient's body.

Radioisotopes also are commonly used for detection and minimally invasive treatment of cancer and other diseases.

ACPR to ACRR __ a brief history

During the remainder of 1996 and into next year, Sandia's Annular Core Research Reactor will be converted to fully support the first large_scale production of molybdenum99 in the US. The program is the latest in a long series of high_profile projects for the reactor.

The ACRR was first constructed at Sandia in 1969 as the Annular Core Pulse Reactor, so named because of its intended role in weapons testing. Different weapons components __ such as arming, fuzing, and firing devices __ were treated with pulses of gamma radiation or neutrons to determine their ability to survive an atmospheric nuclear blast. Every weapon design in the US nuclear stockpile has been certified by the ACRR.

In the late 1970s the program's focus changed, and in 1979 the ACPR became the ACRR after some major modifications associated with changing the reactor fuel to a unique high_performance material and design. The reactor was then used to establish safety standards for nuclear reactors through the Nuclear Regulatory Commission reactor safety research program, as well as to continue to provide Defense Programs support with its enhanced performance capacity.

Response to Commentor No. 2029

Commentor No. 2029: Tom Clements (Cont'd)
Nuclear Control Institute

The 1980s and early '90s saw another change in focus, this time to testing nuclear rocket fuels and reactor_driven laser systems. The conversion to moly_99 production will be the reactor's first foray into radiopharmaceuticals.

If you have questions or need further information, contact Rod Geer by e_mail at: wrgeer@sandia.gov

Response to Commentor No. 2029

Commentor No. 2030: Carol Hanson

From: Carol hanson
[SMTP:CAROL_HANSON@PARKROSE.K12.OR.US]
Sent: Thursday, September 21, 2000 7:17:06 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: I oppose the restart of the FFTF Nuclear Reactor at Hanford!!!!
Auto forwarded by a Rule

I oppose the restart of the FFTF Nuclear Reactor at Hanford!!!!

2030-1***Response to Commentor No. 2030***

2030-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 2031: Donald E. Wood

From: p53bhw@gocougs.wsu.edu%internet
[SMTP:P53BHW@GOCOUGS.WSU.EDU]
Sent: Friday, September 22, 2000 12:06:51 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF Restart
Auto forwarded by a Rule

Dear Ms. Brown:

Please approve the restart of the FFTF. The potential for saving many lives with medical isotopes fully justifies any costs involved.

Donald E. Wood, Ph.D.
114 Spengler St.
Richland. WA 99352

2031-1

Response to Commentor No. 2031

2031-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 2032: Marjorie Westman

NI PEIS Toll_Free Telephone

9/18/00

Marjorie Westman
123 McKinley
Burleith, WA 98233
360_757_1245

Hello. My name is Marjorie Westman. I live at 123 McKinley, in Burleith, Washington, that's 98233. I'm calling the Department of Energy to hope and pray that you will shut down the Fast Flux Facility. This is an abomination that we should not be permitting. It is simply the most unethical thing. We were so blase in the beginning that we assumed that we could dispose of nuclear waste without any problem and look where it is now. The irony of beginning something which by all reports is really not necessary is an act of serious irresponsibility. I do hope that this is something that you will not permit to happen. If you need my number, my phone number is 360_757_1245. Thank you very much.

2032-1

2032-2

2032-3

Response to Commentor No. 2032

- 2032-1:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.
- 2032-2:** DOE notes the commentor's concern regarding waste generation and disposition. The restart of FFTF or any of the other proposed alternative facilities would not impact the schedule or available funding for existing cleanup activities at Hanford, INEEL, or ORR. The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed action for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.
- 2032-3:** Consistent with its mandates under the Atomic Energy Act, DOE seeks to maintain and enhance its infrastructure for the purposes of addressing three primary needs: 1) to support the need for increased domestic production of isotopes for medical, research, and industrial uses, as initially identified by a panel of experts in the medical field and reaffirmed by the Nuclear Energy Research Advisory Committee; 2) to support future NASA space exploration missions by re-establishing a domestic capability to produce plutonium-238, a fuel source that is required for deep space missions and which the U.S. has no long-term, assured supply; and 3) to support civilian nuclear research and development needs in order to maintain the clean, safe, and reliable use of nuclear power as a viable component of the United States' energy portfolio. Section 1.2 of Volume 1 was revised to clarify the purpose and need of the proposed action.

Commentor No. 2033: Robert Hobatch

Hanford Watch
2285 SE Cypress
Portland, Oregon 97214



Ms. Colette Brown
U.S. Department of Energy
Office of Space and Defense Power Systems
NE-50
19901 Germantown Road
Germantown, Maryland 20874-1290

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Public comment on Nuclear Infrastructure Draft Programmatic Environmental Impact Statement (NI PEIS)

I am opposed to restart of the Fast Flux Test Facility reactor because:

- 1) THE RADIO ISOTOPES CAN BE MANUFACTURED AT OTHER FACILITIES SAFER & CHEAPER
- 2) NASA HAS STATED IT DOESN'T NEED A NEED FOR P238.
- 3) WE DON'T NEED MORE NUCLEAR REACTORS

Name ROBERT HOBATCH
Address 7746 SE 17TH
City, state PORTLAND, OR Zip 97202

2033-1

2033-2

2033-1

Response to Commentor No. 2033

2033-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2033-2: Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms of plutonium-238 in the U.S. inventory available to support future NASA space missions; no viable alternative to using plutonium-238 to support these missions currently exists.

A May 22, 2000, correspondence from NASA to DOE identified that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, the suspension of SRTG development efforts was conducted in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires 1/3 less plutonium as its fuel source. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000 letter to DOE that the plutonium-238 needed for large RTG may be maintained as a backup. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

Commentor No. 2034: Carol Jane Weidig

Hanford Watch
2285 SE Cypress
Portland, Oregon 97214



Ms. Colette Brown
U.S. Department of Energy
Office of Space and Defense Power Systems
NE-5G
19901 Germantown Road
Germantown, Maryland 20874-1290

0874+1207 1411100000000000000000000000000000000000

Public comment on Nuclear Infrastructure Draft Programmatic Environmental Impact Statement (NI PEIS)

I am opposed to restart of the Fast Flux Test Facility reactor because:

I am strongly opposed to being involved with "nuclear" energy at all. It is dangerous no matter what you do or how you look at it. Dangerous waste is dangerous.

Name Carol Jane Weidig
Address 2314 NW Marshall
City, state Portland OR Zip 97210

2034-1

2034-2

2034-3

Response to Commentor No. 2034

- 2034-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.
- 2034-2:** The commentor's opposition to nuclear energy is noted. The missions to be addressed in this PEIS, which include the production of medical and industrial isotopes, the production of plutonium-238, and nuclear research and development, can currently only be met using nuclear reactor or accelerator technologies.
- 2034-3:** DOE notes the commentor's concern regarding waste generation and disposition. The restart of FFTF or any of the other proposed alternative facilities would not impact the schedule or available funding for existing cleanup activities at Hanford, INEEL, or ORR. The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed action for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

Commentor No. 2035: Mildred McElhaney

September 17-2000

*Colette E. Brown
71E 50
US Dept. of Energy
Hermantown, MD 20874*

*I wish to comment regarding the
Hanford Nuclear Site in my state.*

*We need to clean up the wastes &
not put any more people in jeopardy.
We should not start any new nuclear
activity. Let's honor the Tri-Party
Agreement & get on with the
clean-up.*

Sincerely

*Mildred K. McElhaney
5806 - 242nd S.W.
Mountlake Terrace WA 98043
425-673-0680*

2035-1

Response to Commentor No. 2035

2035-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

Commentor No. 2036: Marion Olson

Marion Olson
 23904 84th Ave.W.
 Edmonds, Wa 98026

U.S. Dept of Energy

Hanford is supposed to be cleaned
 up, not go into production
 I wish to permanently deactivate FFTF
 with no new missions!

Sincerely,
 Marion Olson

Sept. 18, 2000

2036-1

2036-2

Response to Commentor No. 2036

- 2036-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.
- 2036-2:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Commentor No. 2037: Matthew Levinger

Response to Commentor No. 2037

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT



Draft PEIS Comment Form

I urge you not to restart the FFTF at Hanford, because it is unnecessary and because it poses serious environmental danger.

2037-1
2037-2
2037-3

There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
- returning this comment form to the registration desk at the meeting or to the address below
- calling toll-free and leaving your comments: 1-877-562-4593
- faxing your comments toll-free to: 1-877-562-4592
- commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Matthew Levinger
 Organization: Lewis & Clark College
 Home/Organization Address (circle one): Dept. of History, Lewis & Clark
0615 SW Palatine Hill Rd.
 City: Portland State: OR Zip Code: 97219
 Telephone (optional): 503-768-7449
 E-mail (optional): _____

COMMENT PERIOD EXTENDED

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Colette E. Brown, NE-50
 U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
 Toll-free Telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
 E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00

- 2037-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.
- 2037-2:** Consistent with its mandates under the Atomic Energy Act, DOE seeks to maintain and enhance its infrastructure for the purposes of addressing three primary needs: 1) to support the need for increased domestic production of isotopes for medical, research, and industrial uses, as initially identified by a panel of experts in the medical field and reaffirmed by the Nuclear Energy Research Advisory Committee; 2) to support future NASA space exploration missions by re-establishing a domestic capability to produce plutonium-238, a fuel source that is required for deep space missions and which the U.S. has no long-term, assured supply; and 3) to support civilian nuclear research and development needs in order to maintain the clean, safe, and reliable use of nuclear power as a viable component of the United States' energy portfolio. Section 1.2 of Volume 1 was revised to clarify the purpose and need of the proposed action.
- 2037-3:** The concerns expressed in the comment with respect to the potential impacts associated with FFTF restart are noted. The environmental impacts from operation of the Hanford facilities during normal operations and from postulated accidents are presented in Section 4.3 of the draft NI PEIS. The assessments were made using well established and accepted analytical methods, as described in Appendixes G through L. The analytical methodology is conservative by nature; the actual impacts to the environment would be expected to be less than those calculated. All impacts have been shown to be small. No fatalities among workers or the general public would be expected over the full 35-year operational period. The impacts to the biosphere (air, water, and land) are also seen to be small.

Chapter 2—Written Comments and DOE Responses

Commentor No. 2038: Paul Rittmann

Draft PEIS Comment Form

I think the FFTF should be used to make isotopes for diagnostic and therapeutic use at medical facilities

Paul Rittmann

2038-1

Response to Commentor No. 2038

2038-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.



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calling toll-free and leaving your comments: 1-877-562-4593
faxing your comments toll-free to: 1-877-562-4592
commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Paul Rittmann

Organization:

Home Organization Address (circle one): 5001 W Skagit Ave

City: Kennewick State: WA Zip Code: 99336

Telephone (optional):

E-mail (optional): Rittmanns@AOL.com

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Collette E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
toll-free telephone: 1-877-562-4593 • toll-free fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



Draft PEIS Comment Form

I strongly support the restart of FFTF for medical isotope production. To do otherwise is unconscionable and will bring many Americans to pain, suffering and early deaths from cancer.

2039-1

2039-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

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calling toll-free and leaving your comments: 1-877-562-4593
faxing your comments toll-free to: 1-877-562-4592
commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): R L KATHREN

Organization: SELF

Home/Organization Address (circle one): 137 SPRING

City: RICHMOND State: VA Zip Code: 23132

Telephone (optional): 809-375-3316

E-mail (optional): KATHREN@TUD.COM

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Collette E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00



Commentor No. 2040: Kara Mathiason

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT



Draft PEIS Comment Form

Shut down the reactor! Its a major environmental hazard, ridiculously expensive, it must be dismantled. The neutron rich accelerator is more cost effective. The accelerator is a much simpler safer plan. It makes plutonium 238, medical isotopes, can be used for neutron scattering research, as well as other neutron research projects.

2040-1

2040-2

There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
- returning this comment form to the registration desk at the meeting or to the address below
- calling toll-free and leaving your comments: 1-877-562-4593
- faxing your comments toll-free to: 1-877-562-4592
- commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Kara Mathiason

Organization: none

Home/Organization Address (circle one): 901 Melody Ln

City: Enumclaw State: WA Zip Code: 98022

Telephone (optional): _____

E-mail (optional): _____

COMMENTS MUST BE POSTMARKED BY September 11, 2000

For more information contact: Collette E. Brown, NE-60
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00

Response to Commentor No. 2040

2040-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, as well as Alternative 3, Construct New Accelerator(s). It should be noted that permanent deactivation of FFTF is a part of Alternative 3. DOE also notes the commentor's opinion relative to costs and environmental impacts of restarting FFTF.

As identified in the Cost Report, the listed cost for each alternative is, by itself, not sufficient information to provide a mission decision. Each of the irradiation facility alternatives under consideration can meet various portions of DOE's identified need for expanded isotope production and nuclear research and development. The capability of each irradiation facility to support the proposed expanded mission areas would determine the extent that DOE would be able to meet its stated objectives. The high energy accelerator (Alternative 3) would generate neutrons by spallation, solely for the production of plutonium-238. Alternative 3 would also require the construction of a low-energy accelerator (cyclotron) to produce moderate quantities of medical isotopes through proton-target interactions. Nuclear reactors, such as the FFTF (Alternative 1) could produce a wider range of medical isotopes, as well as plutonium-238, through neutron interactions with appropriate targets. Each facility has its own technical advantages and disadvantages. The relative capabilities of each alternative, the degree to which each alternative satisfies policy and programmatic objectives, as well as the relative cost of alternatives will be factors in the Record of Decision.

2040-2: See response to comment 2040-1.

Commentor No. 2041: Scott Finrock

Response to Commentor No. 2041

Draft PEIS Comment Form

*I support restart of the FFTF
for production of medical isotopes.*

2041-1

2041-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT



There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
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- calling toll-free and leaving your comments: 1-877-562-4593
- faxing your comments toll-free to: 1-877-562-4592
- commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Scott Finrock

Organization: _____

Home/Organization Address (circle one): _____

2169 Clearview
City: Richland State: WA Zip Code: 99352

Telephone (optional): _____

E-mail (optional): Scott.Finrock@ambnet.com

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Colette E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20814
Toll-free telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00

Commentor No. 2042: Marcel Bollinger

Draft PEIS Comment Form

I believe the FFTE is a viable reason for medical isotope production and support it's way for that purpose.

2042-1

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT



There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
- returning this comment form to the registration desk at the meeting or to the address below
- calling toll-free and leaving your comments: 1-877-562-4593
- faxing your comments toll-free to: 1-877-562-4592
- commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Marcel Bollinger

Organization: _____

Home/Organization Address (circle one): 2630 171st Ave SE

City: Bellvue State: WA Zip Code: 98008

Telephone (optional): _____

E-mail (optional): _____

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Colette E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free Telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: NuclearInfrastructure-PEIS@hq.doe.gov



7/12/00

Response to Commentor No. 2042

2042-1: DOE notes the commentor's support for Alternative 1, Restart FFTE.

Commentor No. 2043: Norm Knuter

Response to Commentor No. 2043

Draft PEIS Comment Form

I SUPPORT THE RESTART OF FFTF FOR THE PRODUCTION OF MEDICAL ISOTOPES AND FOR OTHER MISSIONS IN THE NATIONAL INTEREST.

2043-1

2043-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT



There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
• returning this comment form to the registration desk at the meeting or to the address below
• calling toll-free and leaving your comments: 1-877-562-4593
• faxing your comments toll-free to: 1-877-562-4592
• commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): NORM KNUTER

Organization:

Home/Organization Address (circle one): 3802 S. GREEN ST.

City: KENNEWICK State: WA Zip Code: 99337

Telephone (optional):

E-mail (optional): nknuter@3-cities.com

COMMENTS MUST BE POSTMARKED BY September 11, 2000

For more information contact: Colette E. Brown, NE-30
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



7/12/00

Commentor No. 2044: Joan Crooks Washington Environmental Council



September 15, 2000

Colette E. Brown
US Department of Energy
M/S NE-50
19901 Germantown Road
Germantown, MD 20874-1290

RE: DOE Plan to Restart FFTF

Dear Ms. Brown,

The Washington Environmental Council (WEC) is a statewide coalition of 90 member groups and thousands of individuals working to protect, restore, and enhance the environment of Washington State. For 33 years we have worked on a wide range of environmental issues, including preventing pollution and protecting public health.

The U.S. Department of Energy is considering a plan to restart the FFTF Nuclear Reactor at Hanford to produce research medical isotopes and plutonium-238.

The Washington Environmental Council strongly opposes this plan for the following reasons:

Restart of the reactor would:

- Put Hanford back into plutonium production, creating more liquid waste for leaking, high-level nuclear waste tanks;
- Likely delay Hanford clean-up further threatening the Columbia River; and
- Increase the danger of accidents and further nuclear contamination in the Pacific Northwest.

The Environmental Impact Statement released by the DOE does not include important information, such as the following:

- Future demands for medical isotopes can be met using other facilities; and
- Future needs for plutonium to power NASA space missions can be met using existing supplies, supplemented by foreign sources if necessary.

OLYMPIA

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SEATTLE

615 Second Avenue, Suite 380, Seattle, WA 98104-2245

SPOKANE

(509) 747-3643

wec@wecprotects.org (206) 622-8103 FAX (206) 622-8113 www.wecprotects.org

Alpine Lakes Protection Society
American Association of University Women
Association of Bainbridge Communities
C.A.R.E.
Cascade Bicycle Club
Center for Environmental Law and Policy
Chelan River Council
Daughters of Harbor Creek
Givers for Clean Air
Clark County Natural Resources Council
Clatskanie Fly Fishers
Columbia-BiRegional Education Project
Consumers Union for Food Safety
Dava Weich
Dufur Hills Nat'l Area Assoc.
Dulles Database
Environmental Law Clinic - Gonzaga School of Law
Everett Garden Club
Evergreen Islands
Federation of Fly Fishers - Southeast Committee
Floating Homes Association
Friends of Chehalis
Friends of Discovery Park
Friends of Grays Harbor
Friends of the Aquifer
Friends of the Columbia River
Friends of the Linnon Forest
Friends of the Methow
Friends of the San Juan
Friends of the West Naches Wetlands
Grays Harbor Audubon Society
Hood Canal Environmental Council
Hsqahq Alps Trails Club
Knap Range Conservation Group
Knap Audubon Society
Lower Columbia Basin Audubon
Marine Environmental Consortium
Methow Valley Citizens Council
MOUNTAINVIEW
Nogahly Delta Association
North Cascades Audubon Society
North Cascades Conservation Council

North Central Washington Audubon Society
Northwest Energy Coalition
Northwest Fly Angler
Oak Harbor Garden Club
Okanogan Highlands Alliance
Olympic Environmental Council
Olympic Park Associates
Olympic Peninsula Audubon Society
Organization to Preserve Agricultural Lands
Pacific Biodiversity Institute
Pacwest Outwater Environmental Institute
Pond Works Environmental Team
Point Roberts Resettlement Commission
PPO - Salmon
Protect the Peninsula's Future Planning
Puget Soundkeeper Alliance
Republicans for Environmental Protection
Rivers Council of Washington
Save A Valuable Environment
Save Lake Sammamish
Save Our Summers
Save the Woods on Saragosa
Seattle Audubon Society
Seattle Journal for Quality Living
Skagit Audubon Society
Spokane Audubon Society
South Sound Fly Fishers
Sustainable Foundation - Washington Chapter
Tahama Audubon Society
The Bicycle Alliance of Washington
The Lands Council
Transposition Choices Coalition
Yanowier Audubon Society
Washington Fly Fishing Club
Washington Native Plant Society
Washington Ski Touring Club
Washington Trailers Association
Waste Action Project
Washnet Defense Fund
WEAF
Wenatchee Valley Fly Fishers
Wilderness Society
Yakima Valley Audubon Society

2044-1

2044-2

2044-3

2044-4

2044-5

Response to Commentor No. 2044

2044-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2044-2: The use of proposed alternative facilities associated with processing neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or the INEEL sites. Higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. The existing Hanford high-level radioactive waste facilities would also not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

2044-3: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

FFTF is approximately 4.5 miles from the Columbia River. There are no discharges to the river from FFTF and no radioactive or hazardous discharges to groundwater. As indicated in analyses presented in Chapter 4 of Volume 1 (e.g., Sections 4.3.1.1.4, 4.3.3.1.4, 4.4.3.1.4, 4.5.3.2.4, and 4.6.3.2.4), there would be no discernible impacts to groundwater or surface water quality at Hanford from operation of Hanford facilities that would support the nuclear infrastructure missions described in Section 1.2 of Volume 1.

2044-4: FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

2044-5: Candidate facilities, including FFTF and other irradiation facilities, for radioisotope production are described in Section 2.3 of Volume 1.

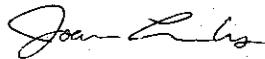
Commentor No. 2044: Joan Crooks (Cont'd)
Washington Environmental Council

Finally, the cost analysis, non-proliferation study and waste management study, all of which are extremely important to measuring the impact of FFTF restart, are separated from the environmental impact study.

|| 2044-6 || 2044-7

We thank you for this opportunity to provide public comment relating to this important issue.

Sincerely,



Joan Crooks
Executive Director

Response to Commentor No. 2044

Candidate irradiation facilities and fabrication/processing facilities dismissed are discussed in Sections 2.6.1 and 2.6.2, respectively. As discussed in Section 1.2.1 of Volume 1, the United States currently purchases approximately 90 percent of its medical isotopes from foreign producers. Consistent with its mandates under the Atomic Energy Act and recommendations of the Expert Panel, DOE would expand its existing nuclear facility infrastructure to, among other things, more effectively support production of isotopes for medical applications and research. Supplies of many research isotopes and radioisotopes that are under development for clinical applications are not readily available from existing domestic or foreign sources, causing some medical research and development programs to be terminated, deferred, or delayed.

As discussed in Sections 1.2.2 and 2.5.1, based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, any purchase of plutonium-238 from Russia beyond what is currently available to the United States through the existing contract would likely require negotiation of a new contract and may require additional NEPA review.

2044-6: As discussed in Chapter 4 of Volume 1, environmental impacts of reasonable alternatives to fulfill the requirements of the DOE missions were disclosed and evaluated in the NI PEIS. DOE made every effort to obtain, analyze, and disclose all required information to make a decision on expanding nuclear infrastructure. The costs and nuclear nonproliferation impacts of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. DOE prepared a separate Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. Such ancillary documents need only be made available to the public prior to any decision being made under CEQ regulations (40 CFR Part 1505.1(e)). Nevertheless, DOE mailed these documents to more than 730 interested parties on August 24 and September 8, 2000, respectively. Both reports were made available immediately upon release on the NE web site (<http://www.nuclear.gov>)

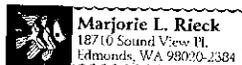
Commentor No. 2044: Joan Crooks (Cont'd)
Washington Environmental Council

Response to Commentor No. 2044

and in the public reading rooms. DOE has also provided summaries of the Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment in Appendixes P and Q, respectively, in the Final NI PEIS.

2044-7: The draft Waste Minimization and Management Plan for the Fast Flux Test Facility (May 2000) was referenced in the NI PEIS and made available prior to the public hearings.

Commentor No. 2045: Marjorie Rieck



9-17-00

Dear Colette Brown,

The only option for the FFTF at Hanford is 5: "permanently deactivate the Fast Flux Test Facility with no new missions".

2045-1

Why add more deadly pollution to the most highly contaminated nuclear site in the western world?

2045-2

Keeping the FFTF on hot standby for four years has cost over \$40 million per year.

2045-1

We need medical isotopes? You're not serious. The Washington State Medical Association, the WA Academy of Family Physicians and Physicians for Social Responsibility/National have all passed resolutions opposing the restart of the FFTF. Thank you for your attention.

2045-3

2045-4

Yours truly,

Marjorie Rieck

Response to Commentor No. 2045

2045-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, and opposition to Alternative 1, Restart FFTF.

2045-2: The concerns expressed in this comment with respect to potential environmental and health impacts associated with FFTF restart are noted. The management of all wastes associated with restart and operation of the FFTF is addressed in Section 4.3.1.1.13 of the NI PEIS. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders. The management of these wastes would be well within management capacities and would not be expected to adversely affect the environment. Impacts on people and ecological resources would be small.

Hanford is committed to cleaning up its existing wastes in a safe and environmentally acceptable manner. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are of high priority to DOE. The restart of FFTF would not divert or reprogram budgeted funds designated for this effort.

2045-3: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

Commentor No. 2045: Marjorie Rieck (Cont'd)

Response to Commentor No. 2045

The United States currently purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements. Section 1.2.1 of Volume 1 has been revised to clarify DOE's isotope production role and other producers' capabilities to fulfill U.S. isotope needs.

2045-4: See response to comment 2045-1.

**Commentor No. 2046: William J. Kinsella
Lewis and Clark College**

William J. Kinsella, PhD
Assistant Professor of Communication
Lewis and Clark College
Portland, OR 97219

18 September 2000

Secretary Bill Richardson
United States Department of Energy
Forrestal Building
1000 Independence Avenue, S.W.
Washington, DC 20585

Dear Secretary Richardson:

I am mailing my comments on the *Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility* (Draft NI PEIS) directly to you, with a copy to Ms. Colette Brown in your Office of Nuclear Energy. I am requesting that these comments be read by a qualified member of your own office staff, as well as by the staff of the Office of Nuclear Energy.

The comments below are in addition to those I read into the record at the public meeting held by the Department of Energy in Portland, Oregon, on 29 August 2000.

After reviewing the draft PEIS, I am in support of a permanent deactivation of FFTF. I also wish to register a strong objection to Alternative 1 in the PEIS, which calls for a restart of FFTF. I am not, at this time, opposed to Alternatives 2, 3, or 4, *if and only if* they are adopted together with a permanent deactivation of FFTF and do not add radioactive or hazardous contamination to the Hanford site (including FMEF).

I am also concerned about a number of process and content issues related to the draft PEIS. The document relies upon a number of *ad hoc* assumptions, and I am requesting that these be examined in more detail in any further stages of the EIS process and in the final decision.

First, it is problematic that the document was prepared entirely by the same program office that is proposing, and will benefit most directly from, an expansion of the nuclear infrastructure. The document presumes, rather than determines, that an expansion of the nuclear infrastructure along the lines proposed is necessary and mandated. In this regard, the PEIS is not a disinterested scientific study. No checks and balances, in the form of outside review or analysis by independent experts, were present in the preparation of the document. While previous studies including those of NERAC were cited in the PEIS, the citations were selected to support the claims of NE and contrary findings in these sources were ignored.

Response to Commentor No. 2046

2046-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, and opposition to Alternative 1, Restart FFTF. The commentor's qualified support is noted for Alternative 2, Use Only Existing Operational Facilities, Alternative 3, Construct new Accelerator(s), and Alternative 4, Construct New Research Reactor. Alternative options that include FMEF are not supported due to the generation of additional waste at Hanford. It should be noted that permanent deactivation of FFTF is a part Alternatives 2, 3, and 4.

2046-2: DOE notes the commentors' concerns. This NI PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR Parts 1500 through 1508 and 10 CFR Part 1021), respectively. DOE evaluated each environmental resource area in a consistent, unbiased manner across all the alternatives to allow a fair comparison among the various alternatives.

The NEPA process addresses concerns related to EIS objectivity and accuracy by requiring the Draft EIS be made available for public comment, and that every comment be addressed, and its resolution in the PEIS explained in the comment response section of the Final PEIS. This process provides the opportunity for agencies of the Federal and state government as well as individuals and organizations with special expertise to provide an input to the PEIS and influence the decisions to be made. DOE has received over 4,000 comments on the Draft. DOE has responded to these comments and will take them into account, along with other factors, in formulating the Record of Decision. Additionally, the facilitated discussions which were held during the public comment period between advocates for FFTF deactivation and FFTF restart, will be considered by the Secretary of Energy in making his decision.

2046-1

2046-2

2046-3: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC,

Commentor No. 2046: William J. Kinsella (Cont'd)
Lewis and Clark College

Secretary Bill Richardson

Page 2

For example, the PEIS assumes that future demands for medical isotopes cannot be adequately met using existing, operational domestic facilities and/or foreign sources. In fact, in a letter to Senator Ted Kennedy dated 22 December 1995, Terry Lash, then Director of the Office of Nuclear Energy, stated that "FFTF...is not necessary to DOE's production mission....ATR and HFIR have significant additional capacity to produce isotopes well into the next century if future market needs develop." As recently as April 2000, NERAC recommended that DOE utilize other domestic facilities in place of FFTF for medical isotope production. Foreign sources are also available, but the PEIS appears to have rejected this option without adequate study.

2046-3

Similarly, the PEIS assumes that future needs for Pu-238 cannot be met using existing inventories, supplemented by foreign sources if necessary. In fact, the PEIS makes unwarranted worst-case assumptions about the amount of Pu-238 that might be needed. These assumptions are not supported by an analysis from NASA or from independent experts. If additional uses for Pu-238, beyond those of NASA, are being considered by DOE, then these have environmental impact implications and should be included in the final PEIS.

2046-4

Second, the separation of the cost and nonproliferation studies from the PEIS process, and the lack of availability of the corresponding documents throughout most of the public comment period, has undermined both the public comment process and the credibility and legitimacy of the EIS process. Cost information is directly pertinent to the risk/benefit analysis that you have asked the public to consider and to comment on. Annual budgets for staffing, training, safety audits, and other essentials will affect public safety and environmental impact throughout the proposed 35 years of nuclear operations. These connections need to be included in the analysis, with the participation of independent experts and the public.

2046-5

Non-proliferation considerations, also, cannot be separated from the EIS process. In fact, nuclear proliferation is a public safety and environmental impact issue. Undermining the existing non-proliferation regime, through the use of MOX and HEU fuels at FFTF, increases risks to the public and to the environment. These risks need to be identified, quantified and included in the analysis, with the participation of independent experts and the public. The appearance of the nonproliferation study well after the completion of the PEIS (and near the very end of the public comment period) gives the impression that the NN study was written to fit the needs of NE. Whether this is true or not, this perception has undermined public confidence in the process. Furthermore, vague references to exploring other fueling options, made in the NN study, may be used to justify a restart of FFTF before those options are properly evaluated.

Third, the draft PEIS assumes that existing safety analyses adequately represent the risks of a catastrophic accident involving FFTF. The reactor, its control system, and its safety systems are now more than twenty years old, and the PEIS considers operating them for another 35 years. At the end of that time FFTF would be 55 years old – older than the lifetime of any reactor to date. Its design is far from "inherently safe" – at least two other liquid sodium reactors have suffered partial meltdowns (EBR-1 and Fermi-1) and others have been removed from service as a result of

2046-6

Response to Commentor No. 2046

established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The conclusions presented in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 regarding the suitability of FFTF to produce research isotopes in a timely and cost efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FFTF for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of FFTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FFTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates the use of FFTF when coupled with the other stated missions. While some existing reactors may possess the potential capability or capacity to support research isotope production, as suggested in the NERAC report, it is unlikely that reliable, increased production of these isotopes to support projected needs could be accomplished without impacting the existing missions of these facilities.

There currently is little room for growth of medical isotope production at either ATR or HFIR. At ATR the neptunium-237 targets for plutonium-238 production will compete for space in the reactor. There are potential negative impacts to the private company that leases reactor space for the production of radioisotopes due to being assigned less

Commentor No. 2046: William J. Kinsella (Cont'd)
Lewis and Clark College

Secretary Bill Richardson

Page 3

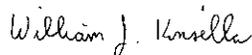
safety risks (Monju) or technical failure (Superphenix). FFTF failure modes may well exist that have not been anticipated or adequately examined. Additional concerns exist regarding the integrity of fuel that has been stored for long time periods, or that is acquired from other suppliers, and that may lack adequate quality control documentation.

Finally, perhaps the most egregious of the assumptions in the PEIS is that the wastes that would be produced by FFTF are acceptable in the context of Hanford. Hanford, its environmental remediation workers, and the Pacific Northwest community bear a truly staggering burden of wastes - the largest burden of any site in the Western world. Restarting FFTF would contaminate buildings and areas that are not yet contaminated, and would directly interfere with the existing cleanup plan for the 300 area. Introducing any new wastes to the site is unacceptable, and would undermine the Department of Energy's own stated mission to clean up Hanford and regain public trust.

Trust, in fact, is at the heart of the matter as we continue with this decision process. FFTF was ordered shutdown by a previous Secretary of Energy in 1993, and despite the creative and costly efforts of those who identify most closely with it, no compelling need for the facility has been shown. It's time to honor the voices of the public and of a wide range of independent technical experts, by shutting FFTF down and moving on toward more productive goals.

Thank you for your attention to these comments, and I look forward to your response.

Sincerely,



William J. Kinsella

✓ copy: Ms. Colette Brown, Office of Nuclear Energy, Science and Technology

Response to Commentor No. 2046

desirable irradiation space. At HFIR, the ability to expand medical isotope targets into additional reactor locations is limited by the potential impacts that the targets have on the primary experiments in the reactor. Medical isotope targets and neptunium-237 targets are not in competition for the same locations at HFIR.

Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of the remaining isotope production capability is dispersed throughout the DOE complex. This capability supports secondary missions, but cannot be effectively used due to the operating constraints associated with the facilities' primary missions (basic energy sciences or defense). DOE is currently meeting most of its short-term requirements. However, in the long-term (next 5 to 10 years) there will be a shortfall in available DOE capacity to meet demand. Should the isotope demand grow consistent with the Expert Panel Report, as it has recently, or if DOE's market share increases, there will be a need for expanded isotope production capacity in the short-term (less than 5 years).

2046-4: Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005. Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, DOE recognizes that any purchase beyond what is currently available to the United States through the existing contract would likely require negotiation of a new contract and may require additional NEPA review.

DOE could purchase plutonium-238 from Russia; however, for supply

Commentor No. 2046: William J. Kinsella (Cont'd)
Lewis and Clark College

Response to Commentor No. 2046

reliability reasons and concern of nuclear nonproliferation, DOE's preference is to establish a domestic plutonium-238 production capability. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

NASA will be the end user of any plutonium-238 produced or purchased as a result of the NI PEIS Record of Decision.

- 2046-5:** DOE notes the commentor's views and concerns. The costs and nuclear nonproliferation impacts of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. DOE prepared a separate Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. Such ancillary documents need only be made available to the public prior to any decision being made under CEQ regulations (40 CFR Part 1505.1(e)). Nevertheless, DOE mailed these documents to more than 730 interested parties on August 24 and September 8, 2000, respectively. Both reports were made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in the public reading rooms. DOE has also provided summaries of the Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment in Appendixes P and Q, respectively, in the Final NI PEIS.
- 2046-6:** FFTF can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

The technical issues that need to be addressed to assure safe operation for an extended lifetime are well understood. The U.S. Nuclear Regulatory Commission has extended the operating license for a commercial power plant an additional 20 years over and above its current 40 year licensing period and is anticipating several more extensions in the near future.

Commentor No. 2046: William J. Kinsella (Cont'd)
Lewis and Clark College

Response to Commentor No. 2046

2046-7: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

The U.S. Congress funds the Hanford cleanup through the Office of the Assistant Secretary for Environmental Management (EM), and the FFTF through the Office of Nuclear Energy, Science and Technology (NE). The nuclear infrastructure missions described in Section 1.2 of Volume 1 would also be funded by NE, which has no funding connection to Hanford cleanup activities. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. This would account for about 2,205 cubic meters of additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposal) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

The NI PEIS addressed the environmental impacts due to the treatment storage, and disposal of the waste generated by the proposed actions for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision.

All new or existing DOE facilities proposed for missions in the PEIS represent the most suitable alternative sites for carrying out the activities

Commentor No. 2046: William J. Kinsella (Cont'd)
Lewis and Clark College

Response to Commentor No. 2046

described in the document. Use of the 300 area facilities at Hanford for these activities would not violate any existing laws or agreements, and would be consistent with historic and ongoing missions at those facilities. These facilities would meet all DOE, EPA, and Washington State requirements before any new activities were initiated.

The 300 Area Revitalization Plan (DOE 1999) provides for continued multi-program R&D operations in the 300 Area, including operation of various laboratories, office facilities, and services. It also provides for consolidation (but not complete elimination) of radiological operations, with support for Hanford Site facility transition and environmental restoration efforts. The plan does not require closure of the 325 and 306-E buildings as long as they are needed for active research projects. Operation of these facilities would not violate any existing agreements between DOE and stakeholders or other legal obligations, nor would it affect ongoing or planned environmental restoration and facility transition activities.

The 306-E facility is not contaminated and is being proposed as a location to conduct activities that do not involve radioactive materials. While the 325 Building has an inventory of radionuclides associated with ongoing activities at the facility, the building is not contaminated in worker accessible areas.

2046-8: See response to comment 2046-1.

Commentor No. 2047: Phyllis E. Fiege

5319 215th S.E.
Woodinville WA 98072
September 18, 2000

Colette E. Brown, NE-50
U.S. Dept. of Energy
19901 Germantown Rd.
Germantown, MD 20874

Dear Ms. Brown,

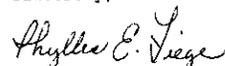
I do not understand why we have not shut down the Fast Flux Test Facility and still keep it on standby. I testified at a hearing in Seattle several years ago supporting the permanent shutdown of the FFTF. At that time most of the people testified against restarting this facility. I heard physicians from the University of Washington Cancer Research state there was no shortage of medical isotopes. I heard the President of the Washington State Medical Association testify against the restart of this facility because of the danger to the health of the workers and the people of this state and region.

The only people testifying in favor of restarting the FFTF were workers from the Hanford-TriCities area. They see startup as an opportunity for jobs. If starting the reactor is a means to provide jobs and to stimulate the economy, it becomes a very expensive program. It gives no benefits to the public as a whole (such as schools, city halls, parks, etc.) and is a danger to the health and safety of the workers and to the citizens while increasing the dangerous toxic pollution of the environment.

The need for jobs and economic stability is real and of concern. We could use the \$40,000,000.00, that we spend each year to keep the FFTF on standby, to increase the number of research and other jobs to clean up Hanford. That would be a better use of our tax dollars.

Please shut down the FFTF--permanently.

Sincerely,


Phyllis E. Fiege

Response to Commentor No. 2047

- 2047-1:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.
- 2047-2:** DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1.2.1 of Volume 1 was revised to incorporate this information.

2047-1

2047-2

2047-3

2047-4

2047-5

2047-6

2047-1

The United States currently purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements.

Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of the remaining isotope production capability is dispersed throughout the DOE complex. This capability supports secondary missions, but cannot be effectively used due to the operating constraints associated with the facilities' primary missions (basic energy sciences or defense). DOE is currently meeting most of its short-term requirements. However, in the long-term (next 5 to 10 years) there will be a shortfall in available DOE capacity to meet demand. Should the isotope demand grow consistent with the Expert Panel Report, as it has recently, or if DOE's market share increases, there will be a

Commentor No. 2047: Phyllis E. Fiege (Cont'd)

Response to Commentor No. 2047

need for expanded isotope production capacity in the short-term (less than 5 years). Section 1.2.1 of Volume 1 has been revised to clarify DOE's isotope production role and other producers' capabilities to fulfill U.S. isotope needs.

2047-3: This NI PEIS provides estimates of the incremental potential human health impacts associated with a range of reasonable alternatives. Alternative 1 includes the restart of FFTF, evaluated for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. The methodology provides results based upon our current knowledge of the health impact of low doses of ionizing radiation and hazardous chemicals. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of each of the analyzed alternatives, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with each of the alternatives and with restarting FFTF would be small.

Worker safety (radiological protection) is a key element of DOE's Radiological Health and Safety Policy (DOE P 441.1, April 26 1996). This policy states in part that DOE facilities must "conduct radiological operations in a manner that controls the spread of radioactive materials and reduces exposure to the workforce and the general public and that utilizes a process that seeks exposure levels as low as reasonably achievable." Each DOE site, including Hanford, is required to implement a radiological control program with the intent to meet this policy goal. Based on the assessment of worker health impacts for the range of reasonable alternatives and options that make use of Hanford facilities, use of these facilities would not be expected to increase the number of cancer fatalities among facility workers. For example in Alternative 1 option 3, all of the activities (target irradiation and processing) occur at Hanford facilities. As shown in Section 4.3.3.1.9, the expected consequences are less than one additional fatal cancer among the workforce; that is, no additional fatal cancers are expected.

2047-4: DOE is not considering restarting FFTF for the purpose of creating jobs and stimulating the economy. However, it is possible that restarting FFTF would have a positive socioeconomic impact on the Hanford area. As work expands within a region, the money spent on

Commentor No. 2047: Phyllis E. Fiege (Cont'd)

Response to Commentor No. 2047

accomplishing this work flows into the local economy. It is spent on additional jobs, goods, and services within the region. The increased taxes realized by local governments, from income taxes, sales taxes, etc., are expected to cover the cost of any socioeconomic impact on schools and public services. The socioeconomic impacts associated with Alternative 1, Restarting FFTF, are presented in Section 4.3 of the NI PEIS.

2047-5: This NI PEIS provides estimates of the incremental potential human health impacts associated with a range of reasonable alternatives. Alternative 1 includes the restart of FFTF, evaluated for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. The methodology provides results based upon our current knowledge of the health impact of low doses of ionizing radiation and hazardous chemicals. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of each of analyzed alternatives, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with each of the alternatives and with restarting FFTF would be small.

Worker safety (radiological protection) is a key element of DOE's Radiological Health and Safety Policy (DOE P 441.1, April 26 1996). This policy states in part that DOE facilities must "conduct radiological operations in a manner that controls the spread of radioactive materials and reduces exposure to the workforce and the general public and that utilizes a process that seeks exposure levels as low as reasonably achievable." Each DOE site, including Hanford, is required to implement a radiological control program with the intent to meet this policy goal. Based on the assessment of worker health impacts for the range of reasonable alternatives and options that make use of Hanford facilities, use of these facilities would not be expected to increase the number of cancer fatalities among facility workers. For example in Alternative 1 option 3, all of the activities (target irradiation and processing) occur at Hanford facilities. As shown in Section 4.3.3.1.9, the expected consequences are less than one additional fatal cancer among the workforce; that is, no additional fatal cancers are expected.

The NI PEIS identifies (in Chapter 3 of Volume 1) endangered species that live on or near all of the candidate sites, as well as aquatic and

Commentor No. 2047: Phyllis E. Fiege (Cont'd)

Response to Commentor No. 2047

wetlands areas that may be impacted by operations at candidate locations According to an International Atomic Energy Agency (IAEA) publication (IAEA Technical Report Series No. 332, Effects of Ionizing Radiation on Plants and Animals at Levels Implied by Current Radiation Protection Standards), a dose rate of 100 millirem per year to the most exposed human will lead to dose rates to plants and animals of less than 0.1 rad per day. The IAEA concluded that a dose rate of 0.1 rad per day or less for animals and 1 rad per day or less for plants would not affect these populations. The largest individual dose for any of the nuclear infrastructures alternatives under normal operations would be less than 0.1 millirem, which is three orders of magnitude less than the IAEA threshold for adverse effects. Therefore, any of the range of reasonable nuclear infrastructure alternatives analyzed would not be expected to result in adverse impacts on plants and animals living in potentially affected areas around the candidate sites.

As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. This would account for about 2,205 cubic meters of additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed actions for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed.

2047-6: The commentor's position concerning funding priorities for research and cleanup at the Hanford Site is noted. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the

Commentor No. 2047: Phyllis E. Fiege (Cont'd)

Response to Commentor No. 2047

U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

FFTF restart would not impact the schedule or available funding for ongoing cleanup activities. The U.S. Congress funds the Hanford cleanup through the Office of the Assistant Secretary for Environmental Management (EM), and the FFTF through the Office of Nuclear Energy, Science and Technology (NE). The nuclear infrastructure missions described in Section 1.2 of Volume 1 would also be funded by NE, which has no funding connection to Hanford cleanup activities. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

Commentor No. 2048: Randy Schwarz

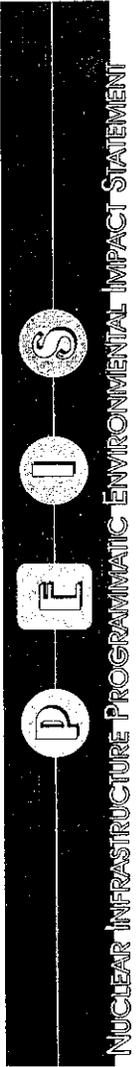
Draft PEIS Comment Form

I Support The restart of FFTF to get the most out of the taxpayers investment in this state of the art facility.

2048-1

Response to Commentor No. 2048

2048-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.



There are several ways to provide comments on the Nuclear Infrastructure PEIS. These include:

- attending public meetings and giving your comments directly to DOE officials
returning this comment form to the registration desk at the meeting or to the address below
calling toll-free and leaving your comments: 1-877-562-4593
faxing your comments toll-free to: 1-877-562-4592
commenting via e-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov

Name (optional): Randy Schwarz

Organization:

Home/Organization Address (circle one): P.O. Box 1308

City: Richland State: WA Zip Code: 99352

Telephone (optional): (509) 946-6182

E-mail (optional):

COMMENTS MUST BE POSTMARKED BY September 18, 2000

For more information contact: Colella E. Brown, NE-50
U.S. Department of Energy • 19901 Germantown Road • Germantown, MD 20874
Toll-free Telephone: 1-877-562-4593 • Toll-free Fax: 1-877-562-4592
E-mail: Nuclear.Infrastructure-PEIS@hq.doe.gov



Commentor No. 2049: Steve Hopkins
Snake River Alliance

From: Steve Hopkins_Snake River Alliance
 [SMTP:SRA@SNAKERIVERALLIANCE.ORG]
 Sent: Friday, September 22, 2000 2:55:13 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: NI PEIS comments
 Auto forwarded by a Rule

Ms. Colette Brown
 DOE, Office of Space and Defense Power Systems

Re: public comment period on the Draft Programmatic
 Environmental Impact Statement for accomplishing expanded
 civilian nuclear energy research and development and isotope
 production mission in the United States, including the role of the
 Fast Flux Test Facility

Dear Ms. Brown,

The Pluto_Kuiper Express is the major NASA mission your
 department is using to justify the near term need for Pu_238. The
 following article at the very least indicates this mission will not
 happen on schedule and may not occur at all until 2020. This
 mission was to require 16.3 pounds and represents 70% of the
 "plutonium requirement" outlined in the PEIS. This is a major blow to
 DOE's plan to produce Pu_238. Other canceled missions may follow
 due to cost constraints. There are only three outlined in the PEIS
 and this one is by far the biggest. Please incorporate the article
 posted below into the Snake River Alliance comments on the
 above_mentioned draft PEIS.

Sincerely,

Steve Hopkins
 Snake River Alliance
 Tel: 208_344_9161, Fax: 208_344_9305
 sra@snakeriveralliance.org
 http://www.snakeriveralliance.org

Response to Commentor No. 2049

2049-1

2049-1: Section 1.2.2 of Volume 1 has been revised to reflect September 2000 updated mission planning guidance from NASA indicating that implementation of the Pluto/Kuiper Express mission as currently conceived was being deferred. However, the guidance also identified the need to maintain additional backup radioisotope power systems to support the Europa Orbiter mission. As such, while this latest NASA guidance modifies the specific radioisotope power systems and missions for which DOE needs to plan, it does not fundamentally change NASA's overall potential plutonium-238 requirements, or the expectation that the available U.S. inventory of this material would effectively be depleted by approximately 2005.

Commentor No. 2049: Steve Hopkins (Cont'd)
Snake River Alliance

Friday September 22 2:08 PM ET
NASA Stops Work on Mission to Mysterious Pluto
By Deborah Zabarenko

WASHINGTON (Reuters) _ Poor Pluto. NASA (news _ web sites) has stopped work on a robotic mission to this distant, mysterious planet, the only one in the solar system not yet explored by earthly spacecraft.

If work does not resume by the end of this year, planetary astronomers said on Friday they fear the mission will lose its place on NASA's space launch schedule in 2004.

That could delay the craft's expected arrival at Pluto and its moon Charon by seven years, and by that time, the distant little planet's tenuous atmosphere could have started to freeze as Pluto moves into a winter lasting more than 100 years.

The National Aeronautics and Space Administration stressed that the so-called Pluto_Kuiper Express mission being put together by the Jet Propulsion Laboratory in Pasadena, California, was being ``rethought and replanned," not scrapped.

``The mission will be deferred until they can replan it for what's affordable," NASA spokesman Don Savage said in a telephone interview.

Originally budgeted at \$350 million a year ago, the mission as currently envisioned would now cost more than \$500 million to complete, Savage said, ``and that's just not affordable."

NASA's chief of space science, Ed Weiler, ``would like to see some way for them to do the mission by 2020 when the atmosphere will still be there, not frozen out yet," Savage said. Pluto, the most distant planet from the Sun, was only discovered in 1930 and takes 248 years to make one solar orbit, so scientists have never observed its winter and do not know exactly what to expect, said

Response to Commentor No. 2049

Commentor No. 2049: Steve Hopkins (Cont'd)
Snake River Alliance

Ellis Miner, a spokesman for the American Astronomical Society.

Get There Before Atmosphere Freezes

The society's planetary scientists expressed "major concerns" over stopping work on the Pluto mission, and Miner said that any substantial delay might mean astronomers would not be able to observe the planet's atmosphere.

Pluto came closest to the Sun in 1989 and has been moving away ever since. Even at its closest, it is still vastly distant: 30 times Earth's distance from the Sun, or about 2.8 billion miles.

"As Pluto moves out (away from the Sun), the amount of sunlight that it gets is decreasing rapidly," Miner said by telephone. "At some point the temperature will be cold enough that the atmosphere will basically snow out onto the surface and all that will be left is a very tenuous trace atmosphere and it may be difficult to detect."

A planet's atmosphere is often the key to finding out how it formed, and with an eccentric planet like Pluto, this could be important. Astronomers have inspected the atmospheres of every other planet except Pluto.

Pluto has always been a bit of an oddball among planets.

It is small and craggy where the other planets in the outer solar system are big and gassy; it is less than half the size of any other planet; its orbit tilts up from the solar system plane and is the only one to cross the orbit of another planet — Neptune; and its moon, Charon, is larger in proportion to it than any other planet's moon.

There was a move afoot last year to reclassify it as a minor planet, instead of a major one, but it kept its major planet standing.

Response to Commentor No. 2049

***Commentor No. 2050: Stanley Hobson, INEEL
Citizens Advisory Board***

> > From: Wendy Lowe[SMTP:WLOWE@JASON.COM]
 > Sent: Thursday, September 21, 2000 7:11:47 PM
 > To: INFRASTRUCTURE_PEIS, NUCLEAR
 > Subject: INEEL CAB Comments
 > Auto forwarded by a Rule
 > Wendy Green Lowe, > Jason Associates Corporation
 > 477 Shoup Avenue, Suite 201, > Idaho Falls, ID 83401
 > Phone: (208) 522_1662, > Fax: (208) 522_2076
 > E_mail: wlowe@jason.com

Citizens Advisory Board
 Idaho National Engineering and Environmental Laboratory
 00_CAB_068, September 25, 2000

Colette E. Brown, Document Manager
 Office of Space and Defense Power Systems (NE_50)
 Office of Nuclear Energy, Science, and Technology
 U.S. Department of Energy
 19901 Germantown Road, Germantown, MD 20874

Dear Ms. Brown:

Note: The Site_Specific Advisory Board (SSAB) for the Idaho National Engineering and Environmental Laboratory (INEEL), also known as the INEEL Citizens Advisory Board (CAB), is a local advisory committee chartered under the Department of Energy's (DOE) Environmental Management (EM) SSAB Federal Advisory Committee Act Charter.

The Department of Energy (DOE) recently issued the Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility (NI PEIS). A public comment period on the document ended on September 18, 2000. The INEEL CAB requested an extension in the public comment period to allow for development of a consensus recommendation in accordance with

Response to Commentor No. 2050

Commentor No. 2050: Stanley Hobson (Cont'd)
Citizens Advisory Board

the CAB's meeting schedule and approved procedures. We have been told that the comment period would not be extended, although we still have received no formal response to our request. Telephone calls from you and from Mr. Dan Funk to me (in my capacity as Chair of the INEEL CAB) offered assurances that the INEEL CAB's comments would be considered to the extent practicable. Because we believe the decision_making process supported by the NI PEIS is of importance, we elected to proceed with development of this recommendation.

It accordance with our charter as an EM SSAB, the attached five_page recommendation, #76, was reached through consensus processes at the INEEL CAB's September 19_20, 2000 meeting. All members in attendance at the meeting understand and agree with the recommendation. It details our concerns and comments regarding the Draft NI PEIS.

In summary, the INEEL CAB believes the NI PEIS should be completely re_written to address the current deficiencies and reissued as a revised draft PEIS for another round of public review and comment. DOE should add missing information, develop a solid approach to evaluating and comparing the alternatives, and enhance its analysis to support comparison among the myriad alternatives. The second draft should 1) substantiate the purpose and need for action, 2) clearly state the Department's objectives, 3) describe multiple, comparable alternatives that would meet those objectives, 4) describe all impacts that would result from the comparable alternatives, and 5) evaluate the alternatives using consistent criteria. The public should be afforded an opportunity to review a revised draft PEIS that is not severely flawed in order to participate in a meaningful manner in DOE's decision_making process, as intended under NEPA.

We await your response to the attached recommendation.
Sincerely,

Response to Commentor No. 2050

***Commentor No. 2050: Stanley Hobson (Cont'd)
Citizens Advisory Board***

Stanley Hobson, Chair, INEEL CAB

cc: Beverly Cook, DOE_ID
 Carolyn Huntoon, DOE_HQ
 Martha Crosland, DOE_HQ
 FRED BUTTERFIELD, DOE_HQ
 Governor Dirk Kempthorne
 Larry Craig, U.S. Senate
 Mike Crapo, U.S. Senate
 Mike Simpson, U.S. House of Representatives
 HELEN CHENOWITH_HAGE, U.S. HOUSE OF
 REPRESENTATIVES
 Robert Geddes, President Pro_Tem, Idaho Senate
 Laird Noh, Chair, Idaho Senate Resources and Environment
 Committee
 Bruce Newcomb, Speaker, Idaho House of Representatives
 Golden C. Linford, Chair, Idaho House Resources and
 Conservation Committee
 Jack Barraclough, Chair, Idaho House Environmental Affairs
 Committee
 Gerald Bowman, DOE_ID
 Kathleen Trever, State of Idaho INEEL Oversight
 Wayne Pierre, U.S. Environmental Protection Agency
 Region X

Citizens Advisory Board
 Idaho National Engineering and Environmental Laboratory

Draft Programmatic Environmental Impact Statement
 for Accomplishing Expanded Civilian Nuclear Energy Research
 and Development and Isotope Production Missions in the United
 States, Including the Role of the Fast Flux Test Facility

The Department of Energy (DOE) recently issued the Draft
 Programmatic Environmental Impact Statement for Accomplishing
 Expanded Civilian Nuclear Energy Research and Development and
 Isotope Production Missions in the United States, Including the Role

Response to Commentor No. 2050

***Commentor No. 2050: Stanley Hobson (Cont'd)
Citizens Advisory Board***

of the Fast Flux Test Facility (NI PEIS). A public comment period on the document ended on September 18, 2000. The Idaho National Engineering and Environmental Laboratory Citizens Advisory Board (INEEL CAB) requested an extension in the public comment period to allow for development of a consensus recommendation in support of DOE's decision_making for this significant decision. We are told that the comment period would not be extended although we still have received no formal response to our request. Because we believe this decision is of importance, we elected to proceed with development of this recommendation.

ADEQUACY UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) requires federal agencies contemplating actions that may result in significant environmental impacts to prepare environmental documentation. Environmental documentation written to comply with NEPA should document the purpose and need for federal action, present an array of reasonable alternatives including a "No Action Alternative," and present all environmental impacts that would result from each reasonable alternative. In addition, the federal agency must conduct public participation activities in support of development of its environmental documentation. The INEEL CAB recommends that DOE make every effort to meet the goals of NEPA and prepare an Environmental Impact Statement that can withstand judicial review. To date, the INEEL CAB has submitted comments twice to support preparation of this document. Our consensus Recommendation #51, dated November 18, 1998 submitted comments during scoping for the "Proposed Production of Plutonium_238 for Use in Advanced Radioisotope Power Systems for Future Space Missions Environmental Impact Statement" which was subsequently merged with this PEIS. We also reached consensus on Recommendation #65, which submitted comments during scoping for the NI PEIS. We could not find evidence that some of our earlier comments had been incorporated into the Draft NI PEIS. NEPA requires scoping as a process by which the public participates in the framing of the

2050-1

2050-2

Response to Commentor No. 2050

- 2050-1:** DOE notes the INEEL CAB's recommendation.
- 2050-2:** CEQ regulations for implementing NEPA require that public comment be solicited to assist in defining the scope of a PEIS (40 CFR 1501.7). Section 1.4 of Volume 1, as supplemented by an expanded discussion provided in Appendix N, summarizes the prevailing issues and concerns raised during the scoping process to include identification of relevant issues raised at individual scoping meetings. Statements, letters, and resolutions were received by DOE during the scoping period. Each such comment document was considered and entered into the NI PEIS Administrative Record. In fact, based on the scoping comments received the scope of the NI PEIS was expanded in a number of areas as outlined in Section 1.4 and Appendix N.

In preparing the Final PEIS, DOE has assessed and considered both oral and written comments received on the Draft PEIS during the public comment period and has responded to these comments in the Final PEIS. Volume 3 of the NI PEIS contains public comments received on the NI PEIS and DOE responses to those comments. Moreover, late comments were considered to the extent practicable.

- 2050-3:** DOE's Office of Nuclear Energy, Science and Technology considered the needs of other DOE program offices when it surveyed the surplus capacity of DOE's existing and planned facilities potentially available to support the NI PEIS proposed action. The needs of the other DOE program offices were a primary consideration, as these facilities were considered as potential alternatives for implementation of the proposed action. One of the primary considerations for including a candidate facility as a reasonable alternative was that implementation of the NI PEIS proposed action not impact the capability of the facility from fully meeting the requirements of preexisting DOE mission objectives. The focus of the design for new facilities in the NI PEIS was to support the NI PEIS proposed action. Surplus capacity at these new facilities could be made available to other DOE program offices and/or the private sector on a noninterference cost-reimbursable basis.

Chapter 4 of the NI PEIS addresses cumulative impacts at INEEL and other sites. These impacts include those associated with the proposed action, current, and planned activities at INEEL. The statement concerning "needs beyond DOE's Office of Nuclear Energy, Science,

***Commentor No. 2050: Stanley Hobson (Cont'd)
Citizens Advisory Board***

environmental documentation. If DOE makes no effort to respond to comments during scoping, how can the agency demonstrate that its public participation program is adequate? The INEEL CAB recommends that DOE make every effort to respond to all public comments, ensuring that the public's efforts are not wasted. The document states that it does not address any needs beyond DOE's Office of Nuclear Energy, Science, and Technology. It makes no sense to exclude other Department needs. Further, it was explained to the INEEL CAB that this PEIS is an "incremental EIS" that addresses only additional impacts attributable specifically to the actions described. NEPA requires consideration and public disclosure of the cumulative effects of all related actions during decision making. The INEEL CAB recommends DOE make every effort to consider all impacts of related decisions to ensure full compliance with NEPA and avoid vulnerability to challenges of segmented decision_making.

PURPOSE AND NEED FOR FEDERAL ACTION

There appear to be four separate objectives that form the basis of DOE's assertion that federal action is needed:

1. To expand the civilian nuclear research capacity and infrastructure.
2. To ensure a supply of medical isotopes to support medical needs,
3. To ensure a supply of isotopes to support various research and development (R&D) initiatives, and
4. To ensure an adequate supply of Plutonium_238 to support NASA's needs.

However, the INEEL CAB concludes that the document does not adequately substantiate the purpose and need for taking action within each of those four objectives. Explanations of current and existing capability and capacity leave the reader with the impression that some or all of the objectives could be achieved through continued operation of existing facilities. For example, it appears that: 1) R&D isotope production could be met through continued operation of the Advanced Test Reactor (ATR), High Flux Isotope Reactor (HFIR), and commercial light water reactors, 2) continued

**2050-2
(Cont'd)**

2050-3

2050-4

Response to Commentor No. 2050

and Technology" is referring to the need for the proposed action and not the cumulative impacts. In Chapter 4, the incremental impacts of the proposed action are evaluated. The results of this analysis are factored into the assessment of cumulative impacts.

- 2050-4:** The purpose and need are described in Section 1.2 of Volume 1. It is DOE's intent to provide domestic capability for production of medical and industrial isotopes, production of plutonium-238 for space missions, and nuclear energy research and development for civilian applications. Section 1.5 of Volume 1 was revised to include the recommendations of the Expert Panel and NERAC subcommittee. NERAC is an independent Federal advisory committee appointed by the Secretary of Energy to advise DOE on the civilian nuclear program.
- 2050-5:** Section 2.7.1.2.3 of Volume 1 of the Draft NI PEIS presents a comparison of mission effectiveness among alternatives. This section has been revised in the Final NI PEIS (see Section 2.7.3, Comparison of Mission Effectiveness Among Alternatives) to provide the reader a better understanding of the medical isotopes that can be produced using accelerator technology (Alternative 3) and reactor technology alternatives (Alternatives 1 and 4).
- 2050-6:** The description of the No Action Alternative is presented in Section 2.5.1 of Volume 1, while impacts associated with this alternative are presented in Section 4.2. Under Option 1, neptunium-237, currently stored in solution form at SRS, would be dispositioned according to current SRS stabilization plans. The environmental impacts of this action are addressed in the "Final Environmental Impact Statement, Interim Management of Nuclear Materials" (DOE/EIS-0220, October 1995). Under Options 2 through 4 the neptunium-237 would be transported from SRS to one of three candidate DOE sites (ORNL, INEEL, or Hanford) for up to 35 years for storage.
- 2050-7:** The alternatives are detailed in Chapter 2 of Volume 1. In particular, Section 2.5.1 describes the No Action Alternative and Section 2.5.3 describes Alternative 2, Use Only Existing Operational Facilities. As described in Section 1.3, alternatives evaluated in the NI PEIS, DOE could choose to combine components of several alternatives in selecting the most appropriate strategy.

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purchases of medical isotopes from Canadian sources could fulfill requirements for medical isotopes, and 3) the U.S. could continue to purchase Plutonium_238 from the Russians. In addition, this analysis is critical to assess the No Action Alternative. In order to remedy the current inadequate substantiation of the purpose and need for federal action, the INEEL CAB recommends that the NI EIS:

- * Provide a clear justification for expansion of civilian nuclear research capacity and infrastructure based on an assessment of deficiencies in current capacity and infrastructure and demonstrate how that need has been verified.
 - * Include a full explanation of all current and viable sources of each desired material (medical isotopes, R&D isotopes, and Plutonium_238) and the capacity of each of those sources.
 - * Include clear estimates of the projected demand for and projected shortfall of each desired material over a specified timeframe. Clearly stated assumptions should form the basis for all projections.
 - * Demonstrate how each estimate of projected demands, shortfalls, and timeframes has been independently verified.
- A solid explanation of the purpose and need for action is necessary for adequate public review of environmental documentation. Further, sound estimates of need are required to: 1) establish design and operational requirements for facilities, 2) estimate the impacts that would result from construction and operation of facilities, and 3) assess whether existing facilities can be used or new facilities will be required.

ALTERNATIVES CONSIDERED

The document presents a mind_boggling array of alternatives. Unfortunately, it is unclear how these alternatives address DOE's four apparent objectives under its purpose and need for action. It appears that some of the alternatives only address a portion of the four objectives. We understand that the No Action Alternative inadequately addresses the four objectives, but question why other alternatives were considered if they do not meet all four of the objectives. The INEEL CAB recommends that DOE more clearly

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2050-5

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2050-8: The specific alternatives and options evaluated in the NI PEIS were not selected for the purpose of "bounding" the impacts. Rather they reflect reasonable potential actions that DOE has selected to meet the irradiation service needs identified in Section 1.2 of Volume 1. While DOE recognizes the possibility that a combination of alternatives/options may be ultimately selected for implementation in the Record of Decision, it did chose the five specific alternatives for this reason.

Although, the alternatives and impacts assessed were not selected for bounding purposes, the impact assessments are based on conservative modeling assumptions (see Appendixes G through J). As described in Section I.1.1, the accident analysis considered a spectrum of accidents including external events (e.g., airplane crashes, nearby explosions, fires), internal events (e.g., equipment failures, human error), natural phenomenon (e.g., floods, tornadoes, earthquakes), and sabotage and terrorist activities. The accidents were screened to determine which accidents would result in the highest consequences (i.e., dose) and the highest risks (i.e., frequency x consequence). In performing these analyses, several conservative and bounding assumptions were made (e.g., worse-case core loading in the irradiated facilities, worse-case target inventories) leading to very conservative consequences.

2050-9: Without identification of the specific "missing details" the commentors question can not be answered. With regard to the specific example, as discussed throughout Appendix E, the coolant for the new research reactor would be water.

2050-10: The DOE Manual 435.1. Radioactive Waste Management defines high level radioactive waste as the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. DOE has prepared an implementation guide to DOE M 435.1 to assist in implementing the requirements contained in that manual. For this particular requirement, the definition of high-level radioactive waste, the guide is intended to facilitate the classification of indefinite waste as to whether or not they are high-level radioactive waste. It is recognized that the definition of high-level radioactive waste is not precise and is

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demonstrate how each alternative considered in the NI PEIS would address the four apparent objectives. Alternatively, DOE should explain which of the four apparent objectives would be achieved through implementation of each of the alternatives, and which would not.

We understand that Neptunium_237 would have no use under the No Action Alternative because no domestic Plutonium_238 production capability would be established. The description of that alternative fails to explain how and where the Neptunium would be treated and disposed, however, and no impacts are described that would be attributable to its management. The INEEL CAB recommends that DOE explicitly discuss how Neptunium_237 would be dispositioned under the description of the No Action Alternative and that the NI PEIS include all impacts associated with its disposition.

In addition, it is not clear why the alternatives described were considered and other apparently viable alternatives were not. For example, it seems that one reasonable alternative would be to use HFIR and ATR to produce medical and R&D isotopes and continue current reliance on Russian sources for Plutonium_238. Another possibility would be to use HFIR and ATR to produce Plutonium_238 and R&D isotopes and to rely on Canadian sources for medical isotopes. ATR and HFIR are fully operational; why not use them for production of isotopes? The INEEL CAB recommends that DOE provide clear explanations for why the alternatives analyzed in the NI PEIS were considered and others were not.

Further, the Draft NI PEIS does not offer an adequate explanation of why the alternatives used for the purposes of estimating bounding impacts were chosen (over other alternatives). Neither does it explain how DOE is certain that those alternatives are most appropriate for bounding the possible impacts that would result from the final selected actions. For example, the options under Alternative 2 do not appear to bound an option that would use ATR, HFIR, and a commercial light water reactor for irradiation of targets.

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essentially a source-based definition that also alludes to concentrations of a given waste stream. Page II-8 of this guide notes that for the purpose of managing high-level waste under DOE M 435.1-1 [sic], spent nuclear fuel includes spent driver elements and/or irradiated target elements that contain transuranium elements. This statement was included in the guide because the concentrations of long-lived isotopes are likely to be somewhat high during reprocessing and it also meets the source-based definition. As a result of reviewing this guide and to address the comments raised, DOE is considering whether the waste from processing of irradiated neptunium-237 targets should be classified as high-level radioactive waste and not transuranic waste. As a result, the Waste Management sections (i.e., Sections 4.3.1.1.13; 4.3.2.1.13; 4.3.3.1.13; and 4.4.3.1.13) of this NI PEIS have been revised to reflect this different classification from what was assumed in the draft NI PEIS. As discussed in these revised sections, irrespective of how the waste is classified (i.e., transuranic or high-level radioactive waste), the composition and characteristics are the same and the waste management (i.e., treatment and onsite storage) for this NI PEIS would be the same. In addition, even if the waste is managed as high-level radioactive waste it would have no impact on the existing high-level radioactive waste management infrastructure (e.g., high-level waste storage tanks), since the high activity waste from processing of the targets would be initially stored and vitrified within the processing facility (i.e., FMEF, REDC, or FDPF).

This NI PEIS addressed wastes produced for each alternative, as well as cumulative impacts related to waste production. In particular, information on waste generation by waste types and how this waste would be managed can be found in the Waste Management Sections of Chapter 4 for each of the alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS would be managed (i.e., treated, stored, and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders. Spent nuclear fuel is discussed for those alternatives where it would be generated as a result of the proposed activities.

2050-11: Each alternative and option is described separately in Volume 1, Section 2.5, Description of Alternatives, and summarized in Table 2-3. DOE

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It was not possible for us to reconstruct the bounding impacts as described using the information presented in the Draft NI PEIS. NEPA documentation should be written in a manner that can be understood by the public. The INEEL CAB recommends that DOE provide clear explanations for how the alternatives used for the bounding impact analysis in the NI PEIS were selected and how those bounding impacts were calculated.

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Finally, some details regarding the various alternatives appear to be missing from the descriptions of those alternatives. For example, what coolant would be used in a new reactor? The waste stream does not include High_Level Waste (HLW), which is inconsistent with our understanding of the processes that will be involved. If HLW will not be produced, there should be an explanation as to how it will be avoided. The document should also describe how spent nuclear fuel would be handled under each alternative. The options available for disposal of the waste streams are determined by the waste classification, and citizens are keenly concerned about DOE's ability to dispose of any waste generated. The description of each alternative should include an explanation of the quantity of each waste that would be generated along with an explanation of how each will be handled and dispositioned. The INEEL CAB recommends that DOE offer fuller explanations of the alternatives considered in the NI PEIS to ensure that readers can fully understand how each would be implemented and how it would impact the environment.

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PREFERRED ALTERNATIVE

In addition to failing to clearly explain the four basic objectives and how each alternative would address each of those objectives, the Draft NI PEIS offers no relative ranking of the four objectives. The members of the INEEL CAB could not discern whether expansion of R&D capacity was more or less important than the production objectives. In addition, it is not clear which of the production missions is most critical. Because of the appearance that some of the alternatives fail to achieve some of the objectives, we are forced

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expects that this explanation is adequate to give the reader an understanding of how each alternative would be implemented and how each would impact the environment. It should be further noted that Chapter 4, Environmental Consequences, each alternative and option are also addressed separately in order to facilitate the reader's understanding of environmental impacts.

2050-12: All of the missions described in Section 1.2 of Volume 1 are considered to be of equal importance. Each of the alternatives described in Section 2.5 would contribute to fulfilling some of the stated missions. However, none of the alternatives can completely meet all of the projected nuclear infrastructure needs. Section 2.7.3 contains a discussion of the mission effectiveness for the alternatives. It is possible that a combination of alternatives could be selected in the Record of Decision, e.g., a low power accelerator in combination with the existing reactors to optimize research isotope production, or in combination with FFTF to optimize research and isotope production.

2050-13: The commentor is correct in noting that the No Action Alternative and Alternative 5, Permanently Deactivate FFTF, do not meet the full purpose and need as stated in the NI PEIS. The No Action Alternative does not need to meet mission goals since it is required under NEPA. Alternative 5 was added to the analysis as a result of scoping comments provided by the public. Permanent deactivation of FFTF is a part of all alternatives except the No Action Alternative and Alternative 1, Restart FFTF; thus, any Record of Decision involving Alternatives 2, 3, 4, or 5 could involve the permanent deactivation of FFTF.

2050-14: The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. However Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements. Section 1.2.1 in Volume 1 was revised to incorporate this information.

DOE could purchase plutonium-238 from Russia; however, for supply reliability reasons and concern of nuclear nonproliferation, DOE's

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to surmise that DOE does not expect to achieve all four. A clear explanation of the relative importance of the four objectives would greatly enhance the readers' ability to understand how DOE will select its preferred alternative. The absence of such discussion prevents meaningful comment on the part of the public regarding the selection of a preferred alternative. The INEEL CAB recommends that DOE offer a clear explanation of the relative importance of the four objectives in the NI PEIS to support public comment on the preferred alternative. Alternatively, DOE should dismiss all alternatives that fail to meet all four objectives.

For example, Alternative 5, involving permanent deactivation of Fast Flux Test Facility (FFTF), would not allow achievement of the four objectives. As such, it does not appear to be an alternative of equal intent to the others presented. The No Action Alternative similarly would not support achievement of the four objectives; but inclusion of a No Action Alternative is required under NEPA. The INEEL CAB recommends that NEPA environmental documentation for permanent deactivation of the FFTF should follow issuance of the Record of Decision for the NI PEIS if in fact restart of FFTF is not selected as the preferred alternative.

The alternatives discussed in the Draft NI PEIS identify both continued reliance on Canadian sources of medical isotopes and continued reliance on Russian sources of Plutonium_238. Because both options are included in this NEPA document, we assume that DOE considers them "reasonable" alternatives under NEPA. The text implies that DOE is unwilling to rely on Canadian sources of medical isotopes, but we do not understand why continued reliance on Russian sources of Plutonium_238 was not similarly dismissed. The INEEL CAB recommends that DOE clearly explain in the NI PEIS why continued reliance on Russian sources of Plutonium_238 is acceptable, yet similar reliance on Canadian sources of medical isotopes is not.

Another issue that should be considered in the selection of a preferred alternative relates to consistency with current

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preference is to establish a domestic plutonium-238 production capabilities.

2050-15: The use of mixed oxide or highly enriched uranium to fuel the FFTF has been rigorously evaluated in the Nuclear Infrastructure Nonproliferation Impact Assessment. This report confirms that the manner in which these fuels would be used, as described in the PEIS, is consistent with nonproliferation policy. In the event that a decision is made to restart FFTF, the first six years of operation would use existing onsite mixed oxide (MOX) fuel. DOE expects that an additional 15-year supply of mixed oxide fuel in Europe, owned by Germany, could be available for FFTF. MOX fuel does not use highly enriched uranium. Further, use of the Hanford MOX fuel would dispose of a significant U.S. stockpile of highly attractive fresh plutonium fuel by conversion to spent fuel through irradiation in FFTF. This represents a safe, low-cost, high benefit opportunity to reduce U.S. civilian plutonium without chemical or bulk processing. Use of the German MOX represents a similar advantage with respect to the German stockpile of separated civilian plutonium. During the period of MOX fuel use, in support of U.S. nonproliferation policy directives, DOE's Office of Nonproliferation and National Security would undertake a study under the Reduced Enrichment Research and Test Reactor (RERTR) program to consider the technical feasibility of using low enriched uranium to fuel the FFTF. Under this nonproliferation protocol, if use of low enriched uranium fuel is found infeasible in FFTF for meeting assigned missions, policy would allow DOE to subsequently procure highly enriched uranium fuel for use in FFTF. Again, this approach is consistent with U.S. nonproliferation policy. DOE did consider the impacts on nonproliferation policy in the selection of its preferred alternative in this Final NI PEIS.

2050-16: While there are differences in the total shipping distances and risks among the alternatives, risks from transportation are small for all of the alternatives. Figures and tables in Section 2.7.1.6 of Volume 1 summarize transportation risks and provide comparisons of transportation risks among alternatives and among options within alternatives. Transportation risk and associated costs were factored into DOE's selection of the preferred alternative.

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nonproliferation policy. It appears that FFTF is a good option based on capability, productivity, and possibly cost. However, we are concerned that the use of highly enriched uranium as a source may violate non_proliferation policy and agreements with international governments. The INEEL CAB recommends that DOE provide a clear explanation in the NI PEIS of how highly enriched uranium could be used without violation of nonproliferation policy. We further recommend that DOE consider impacts on non_proliferation policy in the selection of its preferred alternative.

Another issue that should be considered during the selection of the preferred alternative relates to transportation impacts. The INEEL CAB recommends that DOE make every effort to select a preferred alternative that will minimize transportation, if at all possible. For example, if FFTF is selected, all four missions should be performed at Hanford in order to minimize transportation. Similarly, if DOE chooses to select an existing commercial light water reactor, then HFIR should be chosen to support other objectives, thereby minimizing transportation.

COST CONSIDERATIONS

The INEEL CAB also reviewed the Cost Analysis Report that was written to support the decision_makers consideration of the Draft NI PEIS. It was released too late to be of much use to the public during the public comment period on the Draft NI PEIS. It was well written and understandable, despite some apparent holes. It provided cost estimates for the various alternatives considered in the Draft NI PEIS. We understood from the Draft NI PEIS that all of the alternatives except Alternative 5 would leave FFTF in standby. However, the cost estimates for all of the alternatives except Alternative 1, the No Action Alternative include \$281 million for deactivation of the FFTF. In comparison, restart of the FFTF would require only \$341 million. We conclude that this apparent oversight makes FFTF restart look more favorable as it is only \$60 million more than deactivation of the facility. The INEEL CAB recommends that DOE frame the alternatives considered in the NI PEIS in a manner that would maintain FFTF in standby mode for all alternatives except Alternative

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2050-17: DOE notes the INEEL CAB's opinion that the Cost Report was well written and understandable. DOE prepared a separate Cost Report to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. Such an ancillary document need only be made available to the public prior to any decision being made under CEQ regulations (40 CFR Part 1505.1(e)). Nevertheless, DOE mailed this document to about 730 interested parties on August 24, 2000. The report was made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in the public reading rooms. DOE has also provided a summary of the Cost Report in Appendix P in the Final NI PEIS.

As considered in Volume 1 of the NI PEIS, FFTF would be permanently deactivated should a decision be made to select any alternative other than Alternative 1, Restart FFTF, or the No Action. Under no circumstances would it be maintained in standby except under the No Action Alternative. Under an Alternative 1 decision, since FFTF deactivation would not be implemented, deactivation costs would not be incurred. Therefore, for this NEPA review and record of decision process, the Cost Report correctly assigns FFTF deactivation costs to all alternatives except the No Action Alternative and Alternative 1.

As discussed in Section 2.5.1 of Volume 1, a decision not to establish a domestic plutonium-238 production capability in the future would require DOE to reconsider its stabilization strategy for the neptunium-237 currently stored in solution at Savannah River Site (No Action Alternative Option 1). This may ultimately lead to final disposition of the material. In the near term, stabilization of the neptunium-237 would be conducted in accordance with the Supplemental Record of Decision for the Final Environmental Impact Statement, Interim Management of Nuclear Materials (62 FR 61099). This Record of Decision would be amended or new NEPA analysis performed, if necessary. Therefore, the ultimate disposition of the neptunium-237 is beyond the scope of the NI PEIS and, as a result, the Cost Report includes only the costs of neptunium-237 storage for 35 years under No Action Alternative Options 2-4.

2050-18: The NI PEIS is adequate. This NI PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and

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5 to allow consistent comparisons.

We appreciated Figure S_1 on page S_4 of the Cost Analysis Report. It allowed the reader to make meaningful comparisons among the alternatives. The INEEL CAB recommends that DOE add similar tables to the Draft NI PEIS to support public review.

If Neptunium_237 would not be used under the No Action Alternative, the costs associated with its disposition should be included in the cost estimates. The INEEL CAB recommends that the cost estimate for the No Action Alternative be revised to include all costs associated with disposition (including both treatment and disposal) of the Neptunium_237.

CONCLUSION

For all of the reasons stated above, the INEEL CAB finds the Draft NI PEIS to be inadequate. We conclude that DOE's analysis to date fails to provide sufficient analysis to support rational decision_making. The analysis is not presented in a clear, understandable manner. The document is simply too flawed for meaningful public review.

We understand there is a great rush to issue a Record of Decision before the current administration leaves office. While there may be some political, cost, or even technical advantages to this approach and schedule, this decision is too important to proceed without consideration of all relevant facts and alternatives. The goal of NEPA must not be thwarted.

The INEEL CAB recommends that the NI PEIS be completely re_written to address the current deficiencies and reissued as a revised draft PEIS for another round of public review and comment. DOE should add missing information, develop a solid approach to evaluating and comparing the alternatives, and enhance its analysis to support comparison among the myriad alternatives. The second draft should 1) substantiate the purpose and need for action, 2)

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Response to Commentor No. 2050

the related CEQ and DOE implementation regulations (40 CFR Parts 1500 through 1508 and 10 CFR Part 1021), respectively. The environmental impacts of reasonable alternatives to fulfill the requirements of the missions were disclosed and evaluated in the NI PEIS. Further, DOE evaluated each environmental resource area in a consistent, unbiased manner across all the alternatives to allow a fair comparison among the various alternatives. This was accomplished through review and evaluation of site-specific information on the environmental conditions prevailing at ORR, INEEL, and Hanford to include a comprehensive analysis of the associated environmental and health risks of each alternative. DOE made every effort to obtain, analyze and disclose all required information to make a decision on expanding nuclear infrastructure.

2050-19: See response to Comment 2050-18.

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clearly state the Department's objectives, 3) describe multiple, comparable alternatives that would meet those objectives, 4) describe all impacts that would result from the comparable alternatives, and 5) evaluate the alternatives using consistent criteria. The public should be afforded an opportunity to review a revised draft NI PEIS that is not severely flawed in order to participate in a meaningful manner in DOE's decision_making process, as intended under NEPA.

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Response to Commentor No. 2050

Commentor No. 2051: Sue Slack

From: Sue Slack
[SMTP:SUE_SLACK@PARKROSE.K12.OR.US]
Sent: Friday, September 22, 2000 6:28:10 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford
Auto forwarded by a Rule

I oppose the restart of the FFTF Nuclear Reactor at Hanford!!!! || 2051-1

Response to Commentor No. 2051

2051-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 2052: Andrew Butz

From: Andrew Butz[SMTP:ANBUNZ@HOTMAIL.COM]
Sent: Saturday, September 23, 2000 8:57:18 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Cc: butzeby@aol.com%internet;
deanamadon@serverlogic.com%internet
Subject: Comment: NO restart of FFTF Nuclear Reactor
Auto forwarded by a Rule
Colette Brown, Office of Defense Power Systems (NE_50)
U.S. Dept. of Energy

Dear Ms. Brown:

As a resident of the Columbia River basin, concerned with the vast store of high level nuclear waste now at Hanford, I implore you to halt any plans for restart of the Fast Flux Test Facility. Among the arguments against restarting FFTF:

*The financial cost and potential risk to the public have not been fully disclosed.

*Clean_up was declared by the Federal Government to the highest priority mission at Hanford.

*NASA has stated they have no need to purchase Plutonium_238.

*Washington State Medical Association says there is no need for FFTF as an added source of medical isotopes.

*Shipping weapons_grade plutonium through the region (to fuel FFTF) is an inherently risky (and unnecessary) proposition.

This is only a sampling of the numerous arguments against FFTF. Please cancel any restart plans now. Thanks for your consideration.

Sincerely,
Andrew Butz
411 NE 22nd Ave., #15, Portland, OR 97232

Response to Commentor No. 2052

- 2052-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., DOE's Richland Operations Office, U.S. Environmental Protection Agency, and the State of Washington Department of Ecology). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram funds designated for Hanford cleanup, regardless of the alternative(s) selected.
- 2052-2:** See response to Comment 2052-1.
- 2052-3:** The costs of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. DOE prepared a separate Cost Report to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. Such an ancillary document need only be made available to the public prior to any decision being made under CEQ regulations (40 CFR Part 1505.1(e)). Nevertheless, DOE mailed this document to about 730 interested parties on August 24, 2000. The report was made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in the public reading rooms. DOE has also provided a summary of the Cost Report in Appendix P in the Final NI PEIS.
- 2052-4:** Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. In addition, under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions; no viable alternative to using plutonium-238 to support these missions currently exists. Based on NASA guidance to DOE on the potential use of radioisotope power

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Response to Commentor No. 2052

systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005.

A May 22, 2000, correspondence from NASA to DOE identified that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium 238 to support deep space missions. Rather, the suspension of SRTG development efforts was conducted in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires 1/3 less plutonium as its fuel source. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000 letter to DOE that the plutonium-238 needed for large RTG may be maintained as a backup. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

- 2052-5:** DOE notes the commentor's views. DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

Commentor No. 2052: Andrew Butz (Cont'd)

Response to Commentor No. 2052

The United States currently purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements. Section 1.2.1 of Volume 1 has been revised to clarify DOE's isotope production role and other producers' capabilities to fulfill U.S. isotope needs.

2052-6: The commentor appears to express the concern that DOE would expose people in the Columbia River Basin to risks associated with the transport of weapons-grade plutonium. None of the proposed alternatives involved the shipment of any weapons-grade plutonium to any port in the United States. Alternative 1 does postulate that DOE might decide at some point to import mixed oxide fuel from Europe to fuel FFTF. At this time, however, DOE has not proposed to import this fuel through any specific port. If DOE ultimately decides to import fuel from Europe, it would perform a separate NEPA analysis to select a port. This review would address all relevant potential impacts of overseas and inland water transportation, shipboard fires, package handling, land transportation, as well as safeguards and security associated with the import of SNR-300 mixed oxide fuel through a variety of specific candidate ports on the east and west coasts. It would consider all public comments, including local resolutions, concerning the desirability of bringing mixed oxide fuel into the proposed alternative ports.

In the event that DOE decides to enhance its nuclear infrastructure, it would not expose any population to high, unacceptable risks under any alternative. Any transportation activities that would be conducted by DOE would comply with U.S. Nuclear Regulatory Commission and U.S. Department of Transportation regulations. Associated transatlantic shipment would comply with International Atomic Energy Agency requirements. In Section J.6.2, DOE reviewed the potential maximum impacts from the marine transportation of mixed oxide fuel from Europe to a representative military port, Charleston, South Carolina, and overland transportation to Hanford. Also in that section, a bounding analysis demonstrates that the maximum potential radiological risks to

Commentor No. 2052: Andrew Butz (Cont'd)

Response to Commentor No. 2052

the surrounding public from mixed oxide fuel shipments would be extremely small (e.g., less than 1 chance in a trillion for a latent cancer fatality per shipment from severe accidents at docks and in channels and less than 1 chance in 50 billion for a latent cancer fatality per shipment from overland highway accidents).

- 2052-7:** Chapter 4 of Volume 1 and Appendixes H through J discuss the risk to the public from normal operation and from accidents that would be expected to result from implementation of the nuclear infrastructure alternatives. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1 (which includes restart of FFTF), including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

Commentor No. 2053: Sandra J. Ruff

From: Sandy Ruff
[SMTP:SRUFF@WORLDACCESSNET.COM]
Sent: Monday, September 25, 2000 10:08:51 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF reactor use
Auto forwarded by a Rule

I support the restart of FFTF for the production of medical isotopes. This is a most important project that will benefit many people.

Sandra J. Ruff
24308 NE 167 Avenue
Battle Ground, WA 98604

2053-1

Response to Commentor No. 2053

2053-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 2054: Beth Call

Page 1 of 1

Beth Call

From: Beth Call <trollshouse@bmi.net>
To: Nuclear.Infrastructure-PEIS@hq.doe.gov. <mailto:Nuclear.Infrastructure-PEIS@hq.doe.gov>
Sent: Saturday, September 16, 2000 3:57 PM
Subject: DONT RESTART FFTF

ATT Colette E. Brown

How can you ethically consider restarting FFTF? In the 1995 Hanford Clean-Up Agreement the Dept. of Energy agreed to deactivate and decommission FFTF. The reasons for doing so are even more compelling today:

1. Plutonium238 would be the major product of FFTF, creating still more nuclear waste for the leaking, High-Level Nuclear Waste Tanks. NASA has written to the Dept.Of Energy stating they don't need more Plutonium 238 so why create it?
2. The secondary product, medical isotopes, still in an experimental stage in cancer treatment, are also unneeded according to the Washington Medical Association. An adequate supply is already available through reactors in Canada and elsewhere.
3. Delaying the Hanford Clean-Up and violating the Clean-Up agreement, further threatens the Columbia River, all life in the Columbia River, and all lands drained by the Columbia River. The epidemic cancer, birth defects etc. which would result create far more risk of cancer than any isotopes made in FFTF could ever cure.
4. Shipments of plutonium needed as fuel in FFTF would have to arrive either via Puget Sound or cross country by truck or railroad. The results of any accident in shipping would be catastrophic to any region involved, for thousands of years and countless generations.
5. The DOE will not release the Environmental Impact Statement until the time for public comment is over!
6. More nuclear waste, high or low level, is not acceptable at Hanford until present <wastes are in a permanently stable form. Adding new wastes would interfere with the primary mission of Hanford to clean it up.
7. Hanford employees, who showed up at the Richland hearing Aug. 31, 2000 in such great numbers, need not worry about job security. The Hanford clean-up required will employ large numbers of people for a very long time, probably at least for the following century. If scientists ever are successful in developing a process to render nuclear wastes permanently stable, there will surely be a great demand for them to enact this process on the nuclear waste of the whole world. Engineers should focus on reeducation in clean-up technology.

Please do not take on your shoulders the responsibility for the potentially catastrophic restart of FFTF.

Please enter my comments in the public record. I would appreciate a response.

Beth Call
 trollshouse@bmi.net
 102 Otis
 Walla Walla, WA 99362

2/10/00

Response to Commentor No. 2054

2054-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF. A Tri-Party Agreement change was made to place the milestones for FFTF's permanent deactivation in abeyance until the DOE reaches a decision on whether the facility will be used to meet mission needs. Prior public meetings were held on this formal milestone change. FFTF restart would not impact ongoing cleanup missions at Hanford.

2054-2: As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. High-level radioactive waste would not be generated from merely operating FFTF. This would account for about 2,205 cubic meters of additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. It is DOE's policy that all wastes be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders. No waste would be placed in Hanford's high-level waste tanks.

The use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at Hanford. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. Therefore, the existing Hanford high-level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed action for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision.

2054-3: A May 22, 2000, correspondence from NASA to DOE identified that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean

Commentor No. 2054: Beth Call (Cont'd)

Response to Commentor No. 2054

that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, the suspension of SRTG development efforts was conducted in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires 1/3 less plutonium as its fuel source. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000 letter to DOE that the plutonium-238 needed for large RTG may be maintained as a backup. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

2054-4: DOE acknowledges that other manufacturers can produce certain isotopes that are economically attractive. In fact, the United States currently purchases approximately 90 percent of its medical radioisotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes primarily molybdenum-99, and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements.

Although other manufacturers produce medical radioisotopes, DOE remains the key provider for a large number of radioisotopes that are used in relatively small quantities by individual researchers at universities and hospitals. Because their application is initially experimental, these isotopes are not generally purchased in large-enough quantities to make their production financially attractive to private industry. However, supplies of many research isotopes are not readily available from existing domestic or foreign sources, causing a number of medical research programs to be terminated, deferred, or seriously delayed. Under the NI PEIS proposed action and consistent with its mandates under the Atomic Energy Act, DOE would enhance its existing nuclear facility infrastructure to, among other things, more effectively support production of radioisotopes for medical applications and research. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the U.S. to meet future

Commentor No. 2054: Beth Call (Cont'd)

Response to Commentor No. 2054

demand, and to encourage the commercial sector to privatize the production of isotopes that have established applications to a level that would support commercial ventures.

Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of the remaining isotope production capability is dispersed throughout the DOE complex. This capability supports secondary missions, but cannot be effectively used due to the operating constraints associated with the facilities' primary missions basic energy sciences or defense. DOE is currently meeting most of its short-term requirements. However, in the long-term (next 5 to 10 years) there will be a shortfall in available DOE capacity to meet demand. Should the isotope demand grow consistent with the Expert Panel Report, as it has recently, or if DOE's market share increases, there will be a need for expanded isotope production capacity in the short-term (less than 5 years).

2054-5: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., DOE's Richland Operations Office, U.S. Environmental Protection Agency, and the State of Washington Department of Ecology). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement. As stated in Section N.3.2, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

FFTF is approximately 4.5 miles from the Columbia River. There are no discharges to the river from FFTF and no radioactive or hazardous discharges to groundwater. As indicated in analyses presented in Chapter 4 of Volume 1 (e.g., Sections 4.3.1.1.4, 4.3.3.1.4, 4.4.3.1.4, 4.5.3.2.4, and 4.6.3.2.4), there would be no discernible impacts to groundwater or surface water quality at Hanford from operation of Hanford facilities that would support the nuclear infrastructure missions described in Section 1.2 of Volume 1.

Commentor No. 2054: Beth Call (Cont'd)

Response to Commentor No. 2054

2054-6: Medical isotope production has been identified as one of the purposes and needs (Section 1.2.1 of Volume 1) for which DOE action is necessary. The NI PEIS addresses the environmental impacts that would result from the production of medical isotopes. Although the 12 million medical procedures a year that use radioisotopes would be expected to result in significant health benefits, the evaluation of impacts resulting from medical procedures is outside the scope of the NI PEIS.

This PEIS has provided an estimate of the potential human health impacts associated with a range of reasonable alternatives as described in Section 2.5 of Volume 1. The methodology used is intended to provide realistic results based upon our current knowledge of the health impact of low doses of radiation. Section 4.3 of Volume 1 provides the results of the evaluation of potential health impacts that would be expected to result from implementation of Alternative 1, which includes restart of FFTF, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

As stated in Appendix H of the EIS, other human health impacts (non-fatal cancers and genetic mutations) occur with a lower frequency for the same level of exposure. Since latent cancer fatalities would not be expected among the public, it follows that the expected result for other radiological health impacts would also be small.

2054-7: Alternative 1 does postulate that DOE might decide at some point to import mixed oxide fuel from Europe to fuel FFTF. At this time, however, DOE has not proposed to import this fuel through any specific port. If DOE ultimately decides to import fuel from Europe, it would perform a separate NEPA analysis to select a port. This review would address all relevant potential impacts of overseas and inland water transportation, shipboard fires, package handling, land transportation, as well as safeguards and security associated with the import of SNR-300 mixed oxide fuel through a variety of specific candidate ports on the east and west coasts. It would consider all public comments, including local resolutions, concerning the desirability of bringing mixed oxide fuel into the proposed alternative ports.

Commentor No. 2054: Beth Call (Cont'd)

Response to Commentor No. 2054

In the event that DOE decides to enhance its nuclear infrastructure, it would not expose any population to high, unacceptable risks under any alternative. Any transportation activities that would be conducted by DOE would comply with U.S. Nuclear Regulatory Commission and U.S. Department of Transportation regulations. Associated transatlantic shipment would comply with International Atomic Energy Agency requirements. In Section J.6.2, DOE reviewed the potential maximum impacts from the marine transportation of mixed oxide fuel from Europe to a representative military port, Charleston, South Carolina, and overland transportation to Hanford. Also in that section, a bounding analysis demonstrates that the maximum potential radiological risks to the surrounding public from mixed oxide fuel shipments would be extremely small (e.g., less than 1 chance in a trillion for a latent cancer fatality per shipment from severe accidents at docks and in channels and less than 1 chance in 50 billion for a latent cancer fatality per shipment from overland highway accidents).

2054-8: DOE is committed to providing the public with comprehensive environmental reviews of its proposed actions in accordance with NEPA, and to providing ample opportunity for public comment on those actions. The original comment period on the Draft NI PEIS was set at 45 days according to the Council on Environmental Quality's (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR 1506.10(c)). As stated in the Notice of Availability (65 FR 46443 et seq.), the public comment period extended from July 28, 2000 to September 18, 2000. In preparing the Final PEIS, DOE has assessed and considered both oral and written comments received on the Draft PEIS during the public comment period and has responded to these comments in the Final PEIS. Volume 3 of the NI PEIS contains public comments received on the NI PEIS and DOE responses to those comments. Moreover, late comments were considered to the extent practicable.

2054-9: DOE notes the commentor's opinion. Restoration of the Hanford Site and waste management activities are recognized as the primary missions at Hanford. The Department sponsors numerous research efforts to immobilize and destroy hazardous and radioactive wastes. One of the possible missions for the FFTF facility is researching transmutation of radioactive waste.