

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2499: Anonymous

2499-1 — ... the DOE is forced to hold public hearings where they trick-up with their overheads and expand on statistics that are skewed, and all of it with a straight face. And we sit and listen, and sometimes we clap. ... and they [DOE] can leave things out of their statement and make us dig for them ...

2499-2 — ... the DOE tells the public that fires and explosions don't release any harmful material to the atmosphere, and then we find out it has been harmful.

2499-3 — ... the DOE can disregard its own subcommittee recommendations about isotopes not being suitable for production at FFTF ...

Response to Commentor No. 2499

2499-1: DOE is committed to providing the public with comprehensive environmental reviews of its proposed actions in accordance with NEPA, and holding public hearings is an essential and required part of the NEPA process. DOE policy encourages effective public participation in its decisionmaking 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. No pertinent information has been overtly omitted from the NI PEIS. 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. All references used in preparing the NI PEIS are cited in the reference section of each chapter and appendix. DOE has made these references and other material relevant to review of the NI PEIS and supporting the decisionmaking process available to the public in the designated public reading rooms. DOE made every effort to obtain, analyze, and disclose all required information to make a decision on expanding nuclear infrastructure.

2499-2: DOE notes the commentor's concern over reliability of information provided by the DOE in recent publicized events at the Hanford site. No radioactive materials were "released" in the Hanford Wildfires of 2000. Wildfires did resuspend some materials already in the environment. The resuspended materials were low, slightly above natural background levels. Real-time measurement instruments cannot detect very low levels in the field. The low levels required several days of analysis to quantify. DOE released information to the public as it became available. Based on information to date, this wildfire did not provide environmental releases harmful to the general public or the environment.

2499-3: 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

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Commentor No. 2499: Anonymous (Cont'd)

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

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Commentor No. 2500: Raging Grannies of Seattle

2500-1 — Stop wasting money on FFTF and clean, clean, clean. Cleanup the messes you've already made and don't make any more.

2500-2 — ... shut down FFTF for once and all ...

2500-3 — ... we're not allowed — I had a sign in the back, and we are not allowed to have signs, either. How come the people in the back get to have signs? Look; they've got them.

The additional oral comments were submitted in written form and are addressed in the responses to Commentor No. 284.

Response to Commentor No. 2500

2500-1: 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.

2500-2: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

2500-3: Comment noted. Any use of signs or props at the Seattle, Washington public hearing was beyond the control of DOE. DOE had no control over nor provided oversight of security personnel deployed in the Washington State Convention and Control Center.

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Commentor No. 2511: Anonymous

2511-1 — I wasn't really expecting so many pro-FFTF people here. I just didn't think — it was, you know, really kind of a no-brainer for me, because nuclear waste doesn't go away. That's the biggest thing in my mind. Ten thousand years, 20,000 years, pretty much forever, as far as we human beings are concerned. We're not going to live that long, and it's always going to be there. And so we got to put it somewhere. Well, we put it in a bunch of tanks in Hanford, and we hoped that they didn't leak, and — well, some of them didn't and some of them did. And now, as far as — you know, it's like three kilometers away from the Columbia River in groundwater. And you just can't get rid of it.

2511-2 — And the one thing I guess I'd like to say about cancer is that a hundred years ago we didn't have near the cancer rate. We also didn't have nuclear waste, and we also didn't have toxic waste at near the level. There is a correlation.

Response to Commentor No. 2511

2511-1: 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.

2511-2: The commentor's concern about cancer rates is noted. Statistics from the National Cancer Institute indicate that the rate of cancer incidence and the rate of cancer mortality has dropped during the 1990's [NCI webpage (as of 10/19/2000) - <http://cancernet.nci.nih.gov/statistics.shtml> article entitled "Cancer Death Rate Declined in the 1990s for the First Time Ever"]. A survey sponsored by the National Cancer Institute and published in the Journal of the American Medical Association in 1991 (JAMA 1991:1403-1408) detected no general increase in the risk of cancer death for people living in 107 counties adjacent to or containing 62 nuclear facilities. The Hanford Site, Idaho National Engineering and Environmental Laboratory, and Oak Ridge Reservation were included in the survey. The study used cancer mortality data from Benton, Franklin, and Grant Counties in the survey for the Hanford Site (See Section 3.4.9.3 of Volume 1). This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives including the restart of FFTF for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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.

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Commentor No. 2516: Anonymous

2516-1 — One [of my concerns] is the waste material. I am interested in the isotopes if it does help individuals to live a more — a more comfortable life, I suppose, or a life that has more — I don't know; I can't find the right word right now. But for me, it's about the waste material. And if it does have a half-life of 100,000 years, 20,000 years, what does that mean we're leaving behind for our children, our grandchildren, and so forth and so on.

2516-2 — The other thing that I was thinking about is the idea that if there is a possibility of these — of us being affected by radiation in the universe or in the world, then that's okay, but it's a matter of the concentration as it becomes more and more and more. That would concern me once again, not just the fact that we get this from the world already. But what happens when it's concentrated into a particular point? How does that affect us, as it was with Hiroshima and bombing that country or whatever.

2516-3 — Why is Germany giving this to us, giving it to us for no cost? I mean, I'm thinking to myself "Why are they doing that? Is it political, for political reasons, or is it because they are no longer building nuclear facilities any more? Why are they not pursuing something like this at all?" And that, to me, is a concern. Is it for a political favor that we'll have to repay at some point in time, even though it's at no cost? Because I think that in politics nothing is without a cost, and that's the unfortunate part about it.

2516-4 — My other thing is, when we're talking about statistics, I think of two particular missions that deal with space, the space shuttle Challenger, which if I'm not mistaken, it was either the third or fourth time that it — they were trying to get that space shuttle — or you know, tried to get it back and forth — and it blew up. And that, to me, is a concern, if it was the third or fourth time. Granted, there was an opportunity afterward to correct whatever deficiencies there were. But the fact that it was the third or the fourth time is something that needs to be looked at. And then you're talking about Apollo- 13, if I'm right about that one as well, the one that ended up going around the moon, and they weren't certain if those astronauts were able to come back. And granted, it may be only a few lives in the — in the effort of promoting the United States of America in its space mission. But the fact that it happened, and it was — it wasn't a million times, it was only like ten or thirteen or twenty or however many. That is a concern for me.

Response to Commentor No. 2516

2516-1: DOE notes the commentor's concern regarding waste generation. 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. The environmental impacts associated with managing additional FFTF spent nuclear fuel are discussed in Subsection 4.3.1.1.14 of the NI PEIS. Under this section, it is stated that about 16 metric tons of heavy metal spent nuclear fuel would be generated in the 35-year nuclear infrastructure operation period. As discussed, the incremental impact associated with managing the additional FFTF spent nuclear fuel is extremely small and would have no discernible impact on the existing Hanford spent nuclear fuel management over NI PEIS evaluation period (see section 4.8.3.5 for cumulative impact). The currently used FFTF specific spent nuclear fuel storage system designs (i.e., facility storage vessels and dry storage casks) are the key contributors for determining that the incremental radiological and environmental impacts are small. This section also states that the "spent [FFTF] nuclear fuel would be packaged in acceptable containers and shipped to a geologic repository for ultimate disposal." Disposal of DOE spent nuclear fuel is within the scope of a separate EIS titled, "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).

2516-2: DOE strives to minimize public exposure to nuclear radiation resulting from its activities. Each site, including the Hanford Site is required to implement a radiological control program to meet the policy goal to: "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." (DOE's Radiological Health and Safety Policy [DOE P 441.1, April 26 1996]). Section 3.4.9.1.1 of Volume 1 describes the natural background radiation environment in the vicinity of the Hanford Site. As described in Chapter 4 of Volume 1, radiation doses to the public and workers that would result from implementation of one of a range of reasonable alternatives (described in Section 2.5) would be at least a factor of 100 less than that due to the natural background. Radiation due to manmade sources in the potentially affected areas, including that due to implementation of the

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Response to Commentor No. 2516

alternatives, would add a small risk to the radiological risk due to the natural background. The amount of radiation risk that would be attributable to implementation of the alternatives is summarized in Section 2.7.1 of Volume 1.

2516-3: DOE notes the commentor's viewpoint.

2516-4: DOE notes the commentor's concern over the safety of NASA's space 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. These radioisotope power systems have been used for almost 40 years, and have repeatedly demonstrated their performance, safety, and reliability in various NASA space missions. NASA establishes the need and requirements for space missions and undergoes a thorough NEPA evaluation for each launch.

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Commentor No. 2522: Anonymous

2522-1 — The most important thing that I want to say tonight is that we are all individuals who are very important here, and everything that we have to say is extremely important and should be heard.

2522-2 — The thing that is not being heard is that our environment and our population is going to die off because of man. Man has created cancer to a huge extent. I have a lot of family who have died of cancer.... So you can say that medical isotopes are probably going to be the cure-all of cancer, but do you realize that making medical isotopes is causing cancer in a huge amount every day? And it's getting worse and worse. And like this wonderful man that was sitting over here earlier said, that there wasn't cancer a hundred years ago. That's true. Cancer has been created as much as we keep creating new technology, more pollution, nuclear pollution, nuclear waste, hazardous waste.

2522-3 — A huge polluter is the FFTF nuclear reactor. It is the second-largest polluted area in the world.

2522-4 — I am definitely against the restart of the FFTF, if not for myself, for my child's future.

Response to Commentor No. 2522

2522-1: Comment noted. 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.

2522-2: This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF) for accomplishing the proposed action. 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. 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 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 infrastructure 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, implementation of 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

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Response to Commentor No. 2522

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.

2522-3: The commentor's concerns about pollution from FFTF are noted. Environmental impacts associated with operation of the FFTF and support facilities at Hanford during normal operations and from postulated accidents are discussed in Section 4.3 of Volume 1. Impacts to human health and to ecological resources would be small in the immediate area of the Hanford Site and negligible at distant locations. Waste generated under the nuclear infrastructure alternatives would result in a small burden on the Hanford Site waste management infrastructure. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement.

2522-4: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

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Commentor No. 2523: Anonymous

2523-1 — I notice that you commented on vitrification, or the ideas to melt this into silicon logs. The melting point of silica is 1,410 degrees centigrade. Of the ten elements listed in the radiation dose estimates from the Hanford radioactive releases to the air and the Columbia River declassified between 1944 and 1971, all of them melt below 1,410 degrees centigrade. And five of them are completely above the boiling point, which means that the element would be a vapor which would escape into the atmosphere. This is iodine-131, strontium-90, sodium-24, zinc-65, phosphorus-32, and arsenic-76. So vitrification cannot possibly contain any element which has a boiling point above the melting point of silica; it would have to go to vapor. The phase transition is the same as in ordinary life with an ice cube So to vitrify radioactive waste is to ignore the physical reality of physical chemistry. This cannot possibly work.

2523-2 — I noticed many statements about radioactive isotopes for use in medical purposes, and nowhere did I notice certain kinds of comments. The — I've read newspaper articles about implanting radioactive pellets next to a tumor or in a tumor in order to kill the tumor. But the radioactive pellet is shooting radioactive particles in all directions, which means it is also affecting the normal tissue. The energy of the radioactive decay is sufficient to break chemical bonds, which means that exposure to radioactivity damages DNA, which — and if you damage DNA, you can cause cancer.

2523-3 — I've heard several statements about plutonium low-level waste. I don't believe that it's possible to redefine plutonium as not a high-level waste.

2523-4 — If you were to have a meltdown of this mix of oxide/plutonium fuel, and the mixed oxide, whatever it may be, is a different density than the plutonium, surely the plutonium would separate and reach critical mass and blow up. I'm curious if these risk assessments mention such things.

The Encyclopedia Britannica lists sodium as readily oxidizable. Liquid sodium is readily oxidizable. So presumably, this means that if you heat it hot enough, it can burn in the presence of oxygen. If you've lost containment or some other accident, this seems like an unreasonable risk also.

2523-5 — At the last meeting [scoping] you said that you would send a response form to comments, and I received my response form, and there was no response to my comment on vitrification.

2523-6 — How many people died downwind of Hanford?

Response to Commentor No. 2523

2523-1: DOE notes the commentor's concern regarding vitrification of radioactive waste.

2523-2: 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 be expected from the production of medical isotopes. Although the 12 million medical procedures a year utilizing radioisotopes would be expected to benefit public health, the evaluation of the impact of medical procedures is outside the scope of the NI PEIS.

2523-3: 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 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 on-site 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

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Response to Commentor No. 2523

activity waste from processing of the targets would be initially stored and vitrified within the processing facility (i.e., FMEF, REDC, or FDPF).

2523-4: Mixed-oxide fuel is a homogeneous mixture of uranium dioxide and plutonium dioxide. Mixed oxide fuel has the same general characteristics as uranium dioxide fuel, such as a high melting point, irradiation stability, compatibility with metals and with reactor coolants, and ease of preparation. The NI PEIS accident analysis considered a spectrum of accidents, including fuel melting scenarios, criticalities, and liquid sodium releases. 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 FFTF would be small.

2523-5: It appears that the commentor is making reference to public participation proceedings under the Tri-Party Agreement (TPA) Community Relations Plan (CRP). The conduct and outcome from public hearings and meetings on matters that are unrelated to these DOE missions are beyond the scope of this NI PEIS. Specifically, the TPA, and its associated public involvement process, and NEPA, under which this NI PEIS is being prepared, are legally and functionally independent of each other. The TPA's public involvement process, as per the TPA CRP, is not required for NEPA reviews and public involvement, including public scoping meetings and Draft NI-PEIS public hearings.

2523-6: The commentor's concern for the current severe health impacts is noted. Prevailing winds at the Hanford Site blow toward Grant County, Washington from the south (14.2 percent of the time) and south southwest (11.5 percent of the time) directions. Hence Grant County would be expected to bear the major burden of wind borne contamination from the Hanford Site. A survey sponsored by the National Cancer Institute and published in the Journal of the American Medical Association in 1991 (JAMA 1991:1403-1408) detected no general increase in the risk of cancer death for people living in 107 counties adjacent to or containing 62 nuclear facilities. The Hanford Site, Idaho National Engineering and Environmental Laboratory, and Oak Ridge Reservation were included in the survey. The study used cancer mortality data from Benton, Franklin, and Grant Counties in the survey for the Hanford Site. The methodology used in the survey did not attempt to estimate actual exposures to ionizing radiation or hazardous chemicals and did not allow identification of areas within a given county that might have increased or decreased cancer rates relative to the county as a whole. If any excess cancer mortality risk was present in Grant County, it was too small to be detected with the methods employed in the survey. As discussed in Chapter 4 of Volume 1, no latent cancer fatalities among populations surrounding the Hanford site would be expected to result from implementation of Alternative 1, Restart FFTF.

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Commentor No. 2543: Anonymous

2543-1 — I am in support of the restart of FFTF.

2543-2 — I think you are doing things right and I think you're looking at it very technically and with concern for the American public.

Response to Commentor No. 2543

2543-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2543-2: DOE notes the commentor's support for its execution of the NEPA process.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2549: Linda Alexander

2549-1 — A restart of the FFTF would assure high quality isotopes are available for use more than just the select few for studies and the options you protect, or save, may some day be your only option left.

Response to Commentor No. 2549

2549-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Dan Arrigoni

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 282.

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Commentor No. 2537: India M. Bauer

2537-1 — I oppose the startup.

2537-2 — I think that the cost is prohibitive [for FFTF restart] and the funds, even though they come from a different agency, they could be used for clean-up [at Hanford].

2537-3 — I think for the doctors and businesses who argue in support of this [FFTF restart], I think they have a big incentive for doing that since it's their livelihood and I think the so-called treatment and prevention of cancer it's a big business and people are making a lot of money from it.

2537-4 — I think that even though you say it's low level toxic waste that we'll get, it's still toxic waste and we still don't have the technology to get rid of it.

Response to Commentor No. 2537

2537-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2537-2: The commentor's positions on the cost of Alternative 1, Restart FFTF, and funding for Hanford cleanup are noted. 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. Funding is allocated by Congress and is not interchangeable between EM programs and NE programs. As stated in Section N.3.2 of Appendix N, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

2537-3: The NEPA process provides a number of opportunities for the public to participate in the preparation of an EIS irrespective of their views. DOE takes this participation seriously. In preparing the Final Nuclear Infrastructure PEIS, DOE carefully considered comments received from the public.

2537-4: DOE notes the commentor's concern regarding waste generation. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Brian Berglin

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 281.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Greg Bergquist

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 270.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2545: Gary Bozanke

2545-1 — The FFTF is the quickest and safest way to begin producing high quality isotopes needed by the medical and research communities while our national long term prediction strategy is finalized, and we citizens of Washington should be proud to be able to play a vital part in serving this growing need.

2545-2 — I've worked in commercial industry including shipyards and can assure those with concerns about waste that by design and proven after ten years of excellent operation ratings, there's no waste problem at FFTF.

Response to Commentor No. 2545

2545-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

2545-2: DOE notes the comment.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Shirley Breitenstein

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 269.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2513: John Brown

2513-1 — I haven't looked at the entire PEIS. I have looked at the summary you mailed me — thanks. I found something while I was sitting here listening, that stated that reactors operating in Canada were considered for supplying the radiation services for Pu-238. But since the use of the CANDU reactors does not meet — and this is the part that interested me — “the programmatic issue being addressed in the PEIS” — that is, “the enhancement of the United States infrastructure to support the proposed missions,” meaning that we're not looking for solutions, we're looking for “our” solution.

2513-2 — In the next paragraph down [in the Summary] it says, “Numerous existing U.S. processing hot-cell facilities possess the capabilities and capacity to support the proposed missions. Given this general availability, only existing processing facilities that are co-located at DOE's candidate irradiation facility sites,” like Oak Ridge, ARCO - or what do you call it now, the place in Idaho — and Hanford, “were evaluated in the PEIS.” What you call that in a card game is a stacked deck, or eliminating the outcome of non-preferred outcomes. And I'd like to say right off the bat that this is, on the surface, a draft programmatic environmental impact statement, and I'd like to say that it's one heck of a selling job.

2513-3 — I wondered about the expert panel that was mentioned in here a number of times. I didn't see the — any NERAC group was identified by name.

2513-4 — . . .with regard to the cancer patients, if they're playing politics by restricting the scope of this thing to derive a certain outcome that's based on our good national interest, whether we have to import the Pu-238 from Germany or not, just like our oil, they're playing politics with cancer patients. It isn't a question of trying to help everybody by doing this the right way; this is politics. And if you do build it that way and you do restrict these things, what if the Canadians come down and say, “Hey, we have a treaty, NAFTA, you know; we're supposed to have free trade. This is an item of trade.” What about the WTO? They can come in and say, “Hey, listen, you can't — you know, we can provide this cheaper. What are you guys building this for and keeping us out? Because it's related to your national security interest? Because it's nuclear?” Yeah, you could say that, and we could have a big argument and go to court.

Response to Commentor No. 2513

2513-1: Existing, operational commercial facilities were evaluated in the NI PEIS for supplying irradiation services. These were domestic commercial light water reactors, as opposed to foreign reactors. Although the CANDU reactors were not specifically evaluated as an alternative in the NI PEIS, the environmental impacts associated with transporting the nonirradiated and irradiated neptunium-237 targets between the CANDU reactors and the target fabrication and processing facilities in the United States are bounded by the evaluations presented in the NI PEIS for the commercial light-water reactor options of Alternative 2, Use Only Existing Operational Facilities. Environmental impacts from the operation of a CANDU facility does not fall under the National Environmental Policy Act and would not be evaluated in an environmental impact statement.

2513-2: As discussed in Section 2.6.2 of Volume 1, there are numerous hot cell facilities in the United States with the capabilities and capacity to support the DOE missions. Candidate processing facilities not collocated at one of the DOE irradiation facility sites were dismissed from further consideration. DOE's primary reason for this was to narrow the universe of alternatives and alternative-option combinations down to a manageable number that could be adequately and meaningfully assessed in this NI PEIS. Thus, the facilities remaining form part of the range of reasonable alternatives required by NEPA and CEQ regulations (see 40 CFR 1502.14) to be addressed and that are evaluated in this NI PEIS to accomplish the proposed actions.

2513-3: Information on the Nuclear Energy Research Advisory Committee (NERAC) is provided in Section 1.2 of the NI PEIS. The Nuclear Energy Research Advisory Committee (NERAC) was established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. The members of the NERAC Subcommittee for Isotope Research & Production Planning were selected based upon their expertise and experience in the production, processing, distribution, and application of stable and radioactive isotopes in the biological and physical sciences, and in medicine. The members included basic and clinical scientists, administrators, and users of isotopes from academia, industry, and the federal government, with several possessing a background in reactor production of isotopes.

2513-4: DOE notes the commentor's viewpoint.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2514: Tom Burke

2514-1 — Several people have suggested that a major issue in this decision is jobs. I can tell you, I work at FFTF. I'm interested in restarting FFTF, not for my job. I believe I will have a job at FFTF even if DOE decides today to shut FFTF down. It will take long enough that I will have a job until I decide to retire.

2514-2 — The reason that I support FFTF restart is that it is the best facility available to do the three very important missions that are described in the NI PEIS.

Response to Commentor No. 2514

2514-1: DOE is not considering restarting FFTF for the purpose of creating jobs, although socioeconomic impacts (e.g., number of new jobs created) are addressed in Sections 4.3.1.1.8, 4.3.2.1.8, and 4.3.3.1.8 for Alternative 1, Restart FFTF, Options 1 and 4, 2 and 5, and 3 and 6, respectively. The Record of Decision for the 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.

2514-2: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2518: Norm Buske
Nuclear-Weapons-Free America

2518-1 — . . . basically, FFTF is the wrong facility for its mission. It's terribly expensive to produce neutrons at quarter-throttle on a reactor. In this PEIS it says that — the PEIS postulates that the FFTF would operate — would operate at a nominal power level of 100 megawatts, one quarter of the reactor design power level, to meet the irradiation requirements of the proposed missions.

2518-2 — Periodic increases in power level [at FFTF] between 100 and 400 megawatts may be required to support nuclear research and development activities. That's basically code words for clandestine bomb plant. The way this works is, the FFTF has to be restarted on a civilian mission. So the mission statement cannot and never will include bombs. It's restarted on a civilian mission, and then it basically goes into a clientele arrangement with DOD and DOE to produce super-fissile materials. I ask that in the final environmental impact statement, that the use of the reactor in what you call excursion be included, along with the product, its deployment, and use of the nuclear weapons that will be the ultimate product and consequence of this facility.

2518-3 — I also ask that the FFTF be shut down.

Response to Commentor No. 2518

2518-1: The operation of FFTF at 25 percent of its design power level of 400 megawatts (i.e., 100 megawatts) for the missions described in this EIS is not more expensive than 400 megawatt operation. A separate cost report evaluates the cost of each EIS alternative. The operation of FFTF at 100 megawatts requires less new nuclear fuel and discharges less spent nuclear fuel over the 35 year time period of the mission than if it operated at 400 megawatts.

2518-2: DOE has no hidden agenda for weapons production or use of FFTF for classified missions. The only missions being considered are those analyzed in the NI PEIS, which are the production of isotopes for medical research, and industrial uses; plutonium production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application.

2518-3: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2519: Tom Carpenter
Government Accountability Project

2519-1 — We're concerned about the proposed operation and restart of the FFTF facility, simply from the perspective of the fact that if you look at what Hanford is, it's awash in radioactivity. And it's got radiation and contaminated soils beneath the Hanford waste tanks in unknown quantities — at least a million gallons is estimated, but it may be more, according to studies by Los Alamos. And the thing is that this waste has migrated through the groundwater, through the soils to the groundwater, and is either in the Columbia River right now or is heading that way. And this is a process, of course. It's not all there now, but it's happening. So the response of Hanford to this situation is "Well, we'll remove the waste from the tanks and classify that waste someday, if we can find a contractor and if it's technically feasible, and only 10 percent by the year 2028." Well, maybe that date is going to slip now by five years. Well, what about the waste that's leaked out of the tanks and is heading toward the groundwater and toward the river? The fact is that Hanford is — stores two thirds of the nation's high-level nuclear waste, and you all don't know what to do with — do about that, the fact that it's migrating into the environment. ... Focus on the cleanup.

2519-2 — And our environmental surveillance indicates that radiation levels are starting to increase along the shoreline of Hanford. Your own records indicate that there are spikes happening with tritium and strontium-90 and other levels continuing to escalate, which you would expect to see. This will start having probably more dramatic effects on Washington's crops and fish and people in the area as time goes on.

2519-3 — So this is the backdrop for reopening a reactor that will produce spent nuclear fuel. We don't have a disposal path for that fuel. So we're — it seems to me that you're committing a mistake all over again, which is making more stuff that you don't know what to do with, that's hazardous for a very, very long time. I hear talk of repository. Well, what repository? I mean, we've talked about repositories now in the United States for decades. They're fighting over Yucca Mountain, don't know if it will open or not. But it's certainly way too small to accommodate the volume of nuclear waste in the United States.

2519-4 — There's also talk of bringing in German fuel from a company called SBK. And I heard comments earlier that's not nuclear weapons- grade fuel, which I found a curious comment. It turns out that a whistle-blower, in fact, from a company called ANMS, leaked some documents out concerning this very fuel. And I've got here a letter from the lawyer for this German company to Secretary Hazel O'Leary dated June 13th, 1996, and he refers to the record of decision for the final environmental impact statement on a proposed nuclear weapons non-proliferation policy concerning foreign research reactors' spent nuclear fuel.

Response to Commentor No. 2519

2519-1: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding 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 OF Appendix N, 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.

2519-2: The commentor's concern for existing radiation levels at the Hanford shoreline are noted. The analysis presented in the PEIS addresses the potential for incremental impacts associated with facility operations associated with each of the alternatives proposed. Current levels of contamination and exposures to the workers and public are addressed in the assessment of cumulative impacts presented in Section 4.8. 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. 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2519: Tom Carpenter (Cont'd)
Government Accountability Project

That's the title — not my title, it's just the title; I just read it off, thank you. So this — he's saying, "Take back this German fuel, which is of U.S. origin, for non-proliferation reasons." This is nuclear weapons-grade material, according to the company that has this fuel right now. And it's not just offering to give it away, they're willing to pay somebody \$35 million to take it off their hands.

2519-5 — So don't restart the FFTF.

Response to Commentor No. 2519

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

- 2519-3:** The NI PEIS assumes, for the purposes of analysis, that Yucca Mountain Nevada, would be the final 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 the only candidate site currently being characterized as a potential geological repository for 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.
- 2519-4:** The commentor is correct in stating that the German MOX fuel currently stored in Europe represents a nonproliferation concern because it contains plutonium oxide mixed with uranium oxide. Chemical separation of the plutonium from this fuel could result in the extraction of weapons grade plutonium as discussed in the separate DOE Nuclear Infrastructure Nonproliferation Impact Assessment which was published and released to the public in September, 2000. However, this nonproliferation report also states that, "If a decision is made to restart FFTF, the German MOX fuel could serve an immediate civil nuclear programmatic interest of the U.S. Government and at the same time dispose of a significant stockpile of highly attractive fresh plutonium fuel by conversion to spent fuel through irradiation in FFTF."
- 2519-5:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Katy Carter
[for] Heidi Wills, Seattle City Council*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 271.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2526: Larry Chambers

2526-1 — To leave the FFTF reactor on line, to me, is a symbol of our willingness to continue producing either a near-grade plutonium bomb material, or perhaps like other people have suggested, that they will sneak that in.

2526-2 — The last public hearing I was to at — for Hanford, the BNF, or British Nuclear Fuels, was supposed to resolve the waste dilemma by vitrification. That scenario seems to have fallen through. ... DOE has constantly missed its past cleanups deadlines on the Tri-Party Agreement.

2526-3 — What are we going to do with the new waste? The logic of creating more high-level waste without any concrete cleanup escapes me. We have no national depository, no vitrification plants, no comprehensive plan in action.

2526-4 — Shut down the FFTF reactor, and adopt Alternative 5.

Response to Commentor No. 2526

2526-1: DOE has no hidden agenda for weapons production or use of FFTF to support defense missions. The only missions being considered are those evaluated in the NI PEIS, which are the production of isotopes for medical, research, and industrial uses; plutonium-238 production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application.

2526-2: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford and delays in vitrification of waste. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. DOE has expedited procurement of the vitrification plant design and build services in anticipation of maintaining the TPA goal for processing the most hazardous tank wastes. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities.

2526-3: 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 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2526: Larry Chambers

Response to Commentor No. 2526

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 on-site 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).

2526-4: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2551: Donn Colby
Washington Physicians for Social Responsibility

2551-1 — There's no argument that they're necessary or that FFTF can produce them [medical isotopes]. The question is whether production at FFTF is affordable or economically feasible. The Department of Energy has looked for a private contractor for years to commit to medical isotope production at Hanford, and has been unable to find a single producer willing to commit to the project....

Nothing in the draft EIS indicates that isotopes produced by FFTF would be any more affordable than currently available isotopes. In fact, statement from DOE's own committees confirm that medical isotope production at FFTF is not commercially viable.

2551-2 — The fact is that there is no current shortage of medical isotopes. The National Institute of Medicine issued a report that stated that there is no current shortage of medical isotopes and that they could not foresee any shortage coming in the near future....

I'd like to remove the argument for medical isotope production from decision making process.

2551-3 — I'd like to ... ask that DOE permanently close the FFTF.

Response to Commentor No. 2551

2551-1: DOE notes the commentor's opinion. 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.

2551-2: 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor No. 2551: Donn Colby (Cont'd)
Washington Physicians for Social Responsibility*

Response to Commentor No. 2551

2551-3: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FTFE.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2528: Mike Contini

- 2528-1** — I support Alternate 1, restart of FFTF for the production of medical isotopes and Pu-238.
- 2528-2** — I want a statement in the PEIS that provides a categorical exclusion of using FFTF at any time for production of weapons materials of any kind.
- 2528-3** — I want to now turn my attention to accountability. There is a sign here concerning two FFTF employees fired for falsifying work done. I am familiar with this; I work at FFTF. The event happened, and the employees paid the price: they were fired, as they should have been. Can we say this about Heart of America Northwest? The Government Accountability Project? Columbia River United, or whatever new name they have? Does accountability exist for them? They can distort, misquote, take out of context items of great concern — again, what accountability exists for the watchdogs of Hanford?
- 2528-4** —...want Hanford cleaned up as fast as — as fast and as safe as possible.

Response to Commentor No. 2528

- 2528-1:** DOE notes the commentor's support for Alternative 1, Restart FFTF.
- 2528-2:** The only missions being considered are those stated and evaluated in the NI PEIS, which are the production of isotopes for medical, research, and industrial uses; plutonium-238 production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application. No component of the proposed action is for the purpose of supporting any defense or weapons-related mission. If, in the future, other missions are considered for FFTF, additional NEPA analysis would be conducted.
- 2528-3:** DOE notes the commentor's views and testimony.
- 2528-4:** DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2502: Megan Cornish Freedom Socialist Party and Radical Women

2502-1 — I'd like to support the other speakers who have exposed some of the facts for why the FFTF should not be restarted and should be permanently closed down.

2502-2 — I would like to just mention quickly, the bias of the draft is so blatantly obvious to me. And I'm not a person who's watched every tiny detail of this, the development of this process. But just listening to the proposal tonight, I've found the bias for restarting the reactor appalling.

2502-3 — Under capitalism, if you'll pardon the term, the science, the research, and the medicine that gets funded is only that which benefits corporations and the military. We do not trust or support medical or nuclear energy support that is in the hands solely of the profits system. ... Now civilian nuclear energy research — are you kidding? It's bad enough to have nukes and nuclear research under the control of the military, which at least reports to Congress and the executive branch, which are susceptible to public pressure. But why should we fund civilian profit-making nuclear energy research which will be accountable to no one? This is corporate welfare, and it's corporate welfare at the expense of public welfare. This is the use of a public facility for private business interests. I believe that this is not supposed to happen, and I believe that it's unethical as well as illegal.... This version of corporate welfare means ill-fare for thousands of people, hundreds of thousands of people. And I understand the concern of people, working people in the Tri-Cities area, but I believe that they're being held hostage. We should have money for safe jobs, not death traps and not nukes.

2502-4 — Furthermore, how ironic it is that this nuclear facility is being proposed as part of the war on cancer, given the numbers of people who are already sick and dying from Hanford's radiation.

2502-5 — For the victims of cancer, we demand: stop industrial pollution, stop toxic and nuclear waste, and provide free, nationalized health care. And you can solve the war on cancer.

2502-6 — And I don't think it's accidental that the Tri-Cities is an area with a high concentration of Chicano population and migrant farm workers who use the water in the area, work on it, and sleep on it.

2502-7 — Since the FFTF is not needed for medical research, and it's inappropriate to use it for commercial medical isotopes, and unneeded, and since it's not required by NASA for the space exploration missions that have also been raised as a reason for it, and since federal money should not be used for commercial nuclear energy research — and those were all the alternatives that were listed — and also, there are other alternatives for all of these missions that are far cheaper than the reactor, what is the real reason for the drive to restart the FFTF? Obviously, the reason is military. It is star-wars-type space missions from the U.S. space command, and the use of arms from space directed at earth. Come out and say what it's really all about, because that's the obvious underpinning of this.

Response to Commentor No. 2502

2502-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, and opposition to Alternative 1, Restart FFTF.

2502-2: DOE has made every effort to make this NI PEIS objective. 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. 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.

2502-3: DOE notes the commentor's concerns.

2502-4: The commentor's concern about cancer rates in the Hanford area is noted. Chapter 4 of Volume 1 and Appendixes H through J discuss radiological exposures to the public that would be expected to result from implementation of the nuclear infrastructure alternatives. This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF) for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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. Cancers are believed to be caused by a combination of hereditary and environmental factors, including radiological and chemical agents. Statistics from the National Cancer Institute indicate that the rate of cancer incidence and the rate of cancer mortality has dropped during the 1990's [NCI webpage (as of 10/19/2000) - <http://cancernet.nci.nih.gov/statistics.shtml> article entitled "Cancer Death Rate Declined in the 1990s for the First Time Ever"]. A survey sponsored by the National Cancer Institute and published in the Journal of the American Medical Association in 1991 (JAMA 1991:1403-1408) detected no general increase in the risk of cancer death for people living in 107 counties adjacent to or containing 62 nuclear facilities. The Hanford Site, Idaho National Engineering and

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Commentor No. 2502: Megan Cornish (Cont'd)
Freedom Socialist Party and Radical Women

Response to Commentor No. 2502

Environmental Laboratory, and Oak Ridge Reservation were included in the survey. The study used cancer mortality data from Benton, Franklin, and Grant Counties in the survey for the Hanford Site (See Section 3.4.9.3 of Volume 1).

- 2502-5:** DOE notes the commentor's opposition to pollution and waste and support for national health care. As discussed in Chapter 4 of Volume 1 (e.g. sections 4.3.1.1.13, 4.3.2.1.13, 4.3.3.1.13), waste will be generated by all of the alternatives, including the No Action Alternative. 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. DOE activities associated with this program would not impact the schedule or available funding for existing cleanup activities at candidate sites for implementation of the nuclear infrastructure alternatives. The purpose of this NI PEIS is to evaluate the environmental impacts of a range of reasonable alternatives to fulfill the requirements of the DOE missions, which include the production of medical and industrial isotopes, the production of plutonium-238 for future NASA missions, and civilian nuclear energy research and development. The DOE mission requirements can currently only be met using nuclear reactor or accelerator technologies.
- 2502-6:** The commentor's position is noted. The racial and Hispanic composition of the potentially affected population surrounding the Hanford Site is discussed in Section K.5.3 of Appendix K (Environmental Justice Analysis). As discussed in Chapter 4 of Volume 1 and Appendix K, implementation of the nuclear infrastructure alternatives would pose no significant radiological or nonradiological risk to minority or low-income populations residing in the potentially affected area.
- 2502-7:** DOE has no hidden agenda for weapons production or use of FFTF for military missions. 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. The NI PEIS evaluates a range

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor No. 2502: Megan Cornish (Cont'd)
Freedom Socialist Party and Radical Women*

Response to Commentor No. 2502

of reasonable alternatives for accomplishing the proposed action, one of which includes use of FFTF. Section 1.2 of Volume 1 was revised to clarify the purpose and need of the proposed action.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: William A. Dautel

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 431.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor No. 2506: Tiffany Devoy
Heart of America Northwest*

2506-1 — I am with Heart of America Northwest, which I know in the eyes of many of you means whatever I say will be a half-truth. But what I think is very interesting is that you who have come here [Seattle] from the Tri-Cities are right, but Congressman McDermott is wrong. You are right, but the entire Seattle City Council is wrong. You are right, but Brian Baird, Adam Smith, Ron Wyden — they're all wrong. And all the people who have come here tonight to tell you that they are afraid, that they don't want this to happen, that they are worried about what will happen if it is restarted — they're all wrong, and their concerns are nothing, they're based on lies. And I think that's really disgraceful that you come in here to our city and tell us that our concerns are invalid, and that our representatives are wrong. And I very much object to that kind of attitude and to your presence here tonight.

Response to Commentor No. 2506

2506-1: DOE notes the commentor's views and observations including views toward other speakers at the Seattle, Washington public hearing. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Tiffany Devoy
[for] Carole Woods, Sierra Club*

The oral comments were submitted in written form by the Sierra Club and are addressed in the responses to Commentor No. 262.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2527: Larry Ebersole

2527-1 — . . . everyone is concerned about cancer and preventing disease, and it sounds like tonight there is actually more support for publicly subsidized health care than I realized. And I would like, in sort of a tangent, to make sure that the Department of Nuclear Energy and the people here at this hearing convey to the people in Washington, D.C., at the appropriate level of government — I believe it would be what, Department of Health and Human Services? — that from what we hear tonight, there is really support for some sort of universal health care program that would address all of the relevant disease and their treatments such as cancer. And people haven't mentioned AIDS or major depression or post-trauma or anything like this. But I think, really, you know, definitely, public support for this is a very good idea. There is plenty of funding. Plenty of funding for it, when certain changes are made.

2527-2 — . . . why not find other ways to develop isotopes than restart a reactor? It seems like it's something out of a 1950s horror film, the idea of supporting public health by starting a nuclear reactor.

2527-3 — I wonder how this particular subject interacts with the rest of what the Department of Energy is doing, this stockpile steward program, which is basically modernizing the U.S. nuclear arsenal, preparing for what used to be called strategic defense initiative, the so-called missile defense system — which eventually would be nuclear most likely, because it wouldn't work. And it shouldn't work, because it doesn't have to be built, because there can be nuclear abolition every year. Congresswoman Pelosi, Sonoma, California, introduces an act called the Nuclear Disarmament and Economic Conversion Act. It would do exactly that, calling the president to initiate a treaty for nuclear abolition.

2527-4 — I'm in the "don't restart it" camp.

2527-5 — . . . in the table S-2, "Facilities lacking sufficient neutron production capacity to support the PEIS proposed action without impacting existing missions" — and there's a whole bunch of them listed. Well, one of them happens to be Los Alamos, and another one is Lawrence Livermore. I think the crux here is "Let's not challenge the existing missions"; well, that's the nuclear weapons part of it. So I think that is how these are related. So nuclear disarmament will be helpful.

Response to Commentor No. 2527

2527-1: DOE notes the commentor's interest in national health care, although this issue is beyond the scope of this Nuclear Infrastructure PEIS. The DOE missions addressed in this PEIS include the production of medical and industrial isotopes, the production of plutonium-238, and civilian nuclear energy research and development.

2527-2: The commentor's opposition to the use of reactors for isotope production is noted. The PEIS addresses a range of reasonable alternatives for the production of isotopes. Among these are the use of existing DOE facilities including operating reactors at INEEL and Oak Ridge and the use of FFTF, currently in standby. Additionally, the PEIS considers two alternatives which would make use of new facilities. One would make use of a to-be-built reactor facility and another (Alternative 3) would make use of two to-be-built accelerators. The PEIS provides information that can be used to make the decision on which of these facilities, if any, are to be used for isotope production.

2527-3: DOE notes the commentor's opposition to nuclear weapons and strategic defense initiative, although these issues are beyond the scope of this Nuclear Infrastructure PEIS. The scope of this Nuclear Infrastructure PEIS is limited to analysis of alternatives to fulfill the requirements of the DOE missions, which include the production of medical and industrial isotopes, the production of plutonium-238, and civilian nuclear energy research and development. The three missions are civilian nuclear energy missions and are not defense-related.

2527-4: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2527-5: DOE notes the commentor's views on nuclear disarmament. The evaluation of existing missions at facilities, whether they are nuclear weapons related or not, are not within the scope of this NI PEIS.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2539: Kirstin Ellstrom

2539-1 — I'm against the restart of this nuclear reactor.... My decision is that certainly further studies need to be made before we restart this reactor.

Response to Commentor No. 2539

2539-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF. DOE does not believe that further study is needed if Alternative 1 is selected in the Record of Decision. DOE has evaluated all appropriate information within the context of the NEPA process and believes that the decision-maker has sufficient information on which to base their final recommendation.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2550: Rachael Golden

2550-1 — The estimated cost of restarting the FFTF is roughly \$400 million dollars which could alternatively be spent on Hanford cleanup. Also, this is much, much more than it would cost to create an individual separate facility to create medical isotopes unto itself. And that's the cost.

2550-2 — I question whether there's any benefit to restarting FFTF, No. 1. The blue ribbon medical advisory committee stated FFTF is not a viable source of research isotopes and medical isotopes have been proven to be able to be made in the reactors in Tennessee, Idaho, and Canada.

2550-3 — Also, NASA released a statement on May 27th of this year that it no longer has a need for the quantity of plutonium-238 which would be produced by the FFTF, effectively eliminating them as a purchaser of this exceptionally toxic element.

2550-4 — On the other hand, at the DOE scoping hearing last October, Colette Brown stated that Pu-238 from FFTF would not be used for military purposes. However, it was brought to her attention at this hearing its production of FFTF would indeed free up the Pu-238 already stored around the country for military.

Therefore, if we're restarting the FFTF to produce Pu-238 would free up its use for military systems that are designed to destroy life, there is not only zero benefit to restarting FFTF but indeed it would be a detriment to the human race as nuclear war, even if fought from space, as well as increased nuclear waste and increased risk of nuclear accident ...

Response to Commentor No. 2550

2550-1: 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.

2550-2: DOE assumes that the commentor is referring to 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. These conclusions 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. There currently is little room for growth of medical isotope production at either ATR, in Idaho, or HFIR, in Tennessee. 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 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 in 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2550: Rachael Golden (Cont'd)

Response to Commentor No. 2550

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. 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.

- 2550-3:** 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 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.
- 2550-4:** Small radioisotope thermoelectric generators (RTGs) using plutonium 238 are used to power electronic systems on some strategic weapons, some of which have become surplus due to strategic arms reductions. Although the exact configuration of these RTGs is classified, the amount of plutonium-238 in each unit is relatively small and the assay of the plutonium-238 is unacceptable (too low) for use in RTGs or radioisotope heater units for NASA spacecraft. Therefore, it is not a viable source for consideration in the NI PEIS.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2512: Roy D. Goodman

2512-1 — Let's do away with industrial, nuclear, chemical, and other man-made toxins which poison our environment and cause cancer, so we don't need medical isotopes.

2512-2 — Let's have speakers only speak once at any of these hearings. If you have people that come to these hearings and want to speak at a second hearing, let them go at the end of people who have waited to speak the first time. I don't know if that's happened tonight, but I know it does happen. In other words, if I spoke last night in Portland, I shouldn't get to speak tonight until everyone who hadn't spoken to you before got to speak. You know who those people are. I don't care which side they're speaking for. Your postcard I got in the mail had a toll-free number on it. I called two weeks ago with some questions about tonight; nobody called me back. A week ago I sent an e-mail; nobody e-mailed me back on my questions about tonight. You mailed out a packet of material, Volume 1, Volume 2, summary — it cost you \$10 in postage, plus I don't know what other costs were involved with that. Why don't you just send a postcard out to everybody first, ask them if they want these things. You'll save some money. You could apply it towards cleaning up Hanford, or pay somebody to respond to my toll-free call and my e-mail.

2512-3 — Hanford, it's in Washington State; I said Hanford, full of nuclear waste; I said Hanford suffers from your delay to honor your cleanup agreement.

2512-4 — It's time to shut down the FFTF.

The additional oral comments were submitted in written form and are addressed in the responses to Commentor No. 277.

Response to Commentor No. 2512

2512-1: DOE notes the commentor's concern regarding cancer causing material generation. 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. This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF) for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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.

2512-2: DOE strives to ensure that the hearing format used serves to promote open and equal representation by all individuals and groups, regardless of the motivation for attending, at each and every public hearing. One means used by DOE in trying to ensure equal representation at public hearings is by selecting the order of speakers through a random number drawing. As suggested by the commentor, excluding speakers from speaking in the initial comment round at one hearing if they had already done so at a previous hearing would not be practical to enforce and would serve to undermine the representativeness of the body of concerned persons speaking at each hearing. The commentor's concerns for not receiving a response to questions on the Seattle, Washington public hearing are noted. Both the toll-free telephone line and e-mail were being answered during the course of the public comment period. DOE regrets that the commentor's request for information was not responded to and will take appropriate action to avoid such oversights in the future. DOE apologizes for sending a complete set of the Draft NI PEIS materials to the commentor that was not requested. DOE works

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2512: Roy D. Goodman (Cont'd)

Response to Commentor No. 2512

carefully to strike a balance between keeping the public informed about potential impacts from its proposed actions by making published materials available in a timely manner, as required by NEPA and CEQ regulations, and controlling the cost of the NEPA compliance process. Individuals and groups maintained in the NI PEIS mailing list received a postcard accompanied by either the NI PEIS Summary only or the complete document package (Summary and Draft NI PEIS in hardcopy or CD ROM) based on the preferences indicated in the mailing list. DOE will update the NI PEIS mailing list to ensure that the commentor does not automatically receive documents in the future. However, the commentor may of course request a copy of the Final NI PEIS and the Record of Decision, when published.

- 2512-3:** DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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. 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. Public meetings were held on this formal milestone change. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities.
- 2512-4:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor No. 2547: Jack Griffith
Carpenters and Mill-Race Local 2403*

2547-1 — I don't have any member of my family or immediate family who I can say who've have cancer, but I'm fully supportive of medical isotopes.

2547-2 — It's very unfortunate that we have some folks that do not see the value in what we [unions] do. The media's not our best friend. The media has the ability to send out information that isn't always true. The problem is they're not talking to the worker. Talk to me and I'll tell you what my belief is and what my fellow workers' belief is, and that is safety first. We're here to protect you, me, my family, your family and anybody else in need.

Response to Commentor No. 2547

2547-1: DOE notes the commentor's support of medical isotope production.

2547-2: DOE notes the commentor's view on the priority of safety and protection of the environment at Hanford.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2534: Norm Gundle

2534-1 — I want to state for the record that I am opposed to restarting the facility.

2534-2 — I think there's a myriad of reasons not to, including public safety,

2534-3 — I think there's a myriad of reasons not to, including ... the lack of disclosure by the DOE and many other numerous concerns that are not being addressed and weren't addressed during the EIS.

2534-4 — I don't think there's any reason to add to the nuclear waste we have stored at Hanford.

2534-5 — I think we should be focusing our efforts on doing something with that waste [at Hanford], disposing of it in an environmentally safe way and not contributing to that waste.

2534-6 — I really hope that the DOE can listen to our comments and I'm not swayed by the propaganda that I see at the public hearing. I find it kind of exasperating, they feel they need to sell it to us when it's really a comment period; we need to be giving our comments and not being tried to be swayed by glossy magazine-like ads on the walls.

Response to Commentor No. 2534

2534-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2534-2: The commentor's opposition to the restart of FFTF is noted. This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF) for the proposed action. 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.

2534-3: 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. All references used in preparing the NI PEIS are cited in the reference section of each chapter and appendix. DOE has made these references and other material relevant to review of the NI PEIS and supporting the decisionmaking process available to the public in the designated public reading rooms. DOE made every effort to obtain, analyze, and disclose all required information to make a decision on expanding nuclear infrastructure.

2534-4: Management of wastes that would be generated under implementation of Alternative 1, Restart FFTF, is discussed in Section 4.3 of Volume 1 (e.g., see Section 4.3.1.1.13). Section 4.3.1.1.13 was revised to clarify that, the Hanford waste management infrastructure is analyzed in this PEIS for the management of waste resulting from FFTF restart and operation. This analysis is consistent with policy and DOE Order 435.1, that DOE radioactive waste shall be treated, stored, and in the case of low-level waste, disposed of at the site where the waste is generated, if practical; or at another DOE facility. However, if DOE determines that use of the Hanford waste management infrastructure or other DOE sites is not practical or cost effective, DOE may issue an exemption under DOE Order 435.1 for the use of non-DOE facilities (i.e., commercial facilities) to store, treat, and dispose of such waste generated from the restart and operation of FFTF. In

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2534: Norm Gundle (Cont'd)

Response to Commentor No. 2534

addition, Section 4.3.3.1.13 and 4.4.3.1.13 also address the potential impacts associated with the waste generated from the target fabrication and processing in FMEF and how this waste would be managed at the site.

- 2534-5:** DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities. Waste generation and management under Alternative 1, Restart FFTF, is discussed in Section 4.3 of Volume 1. Waste that would be generated under implementation of Alternative 1 would not pose a significant burden to the waste management infrastructure at the Hanford Site.
- 2534-6:** Comment noted. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2497: Suzanne Heaston
[for] U.S. Senator Slade Gorton, WA

2497-1 — One in three Americans is touched by cancer. Every hour of every day, a child is diagnosed with cancer. Fortunately, every year our nation's scientists develop new technologies for treating cancer and other diseases. Medical isotopes are used in new leading-edge technologies without the usual debilitating side-effects and at lower cost than traditional treatments. Unfortunately, developments are thwarted and treatments are suppressed because our country lacks the production capability for the variety, quantity, and quality of life-saving isotopes that are necessary to conduct research and treat our patients. Restarting the FFTF is imperative in order to meet our nation's needs for life-saving isotopes.

Dr. Reiner Storr, a founding member of the Fred Hutchinson Cancer Research Center in Seattle, wrote to me about his exciting research. He explained that so-called alpha-emitters are likely to make bone marrow transplantation and other cancer therapy much less toxic, more safe, and effective. However, he lamented that the Department of Energy is unable to offer a constant and affordable supply of these unique isotopes. He reported that his research results are, quote, 'nothing short of spectacular,' unquote. But taking the next step into clinical trials is impossible without the availability of alpha-emitting isotopes. FFTF is uniquely capable of producing high-quality alpha-emitters, which are isotopes for treating disease. These treatments dangle by a thread, and could be cut off at any moment by supply lapses or the whims of a crowd of well-intentioned but misinformed protesters. Meanwhile, lives are being lost.

While accelerators primarily produce isotopes for diagnosing disease, they cannot produce many of the isotopes for treating disease. For example, the isotopes for alleviating excruciating bone pain as a result of cancer can only be produced in a reactor. The draft PEIS confirms the need for, the safety of, and the lack of environmental impacts of restarting the FFTF. The accompanying cost analysis confirms the cost-effectiveness of utilizing the FFTF for the entire suite of identified missions.

The FFTF is our nation's newest, most versatile reactor. It can effectively meet our nation's needs for plutonium-238 for the space program and twenty-first century research and development needs. But most importantly, through its isotope program, the Department of Energy has an opportunity to greatly improve the quality of life for millions of Americans who suffer from cancer, cardiovascular, and other diseases. DOE must recognize and embrace its responsibility to provide the quality and quantity of isotopes needed to diagnose and treat our patients. We must have an adequate domestic production facility.

Response to Commentor No. 2497

2497-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2497: Heaston, Suzanne (Cont'd)

Let's not be held hostage to foreign sources of life-saving isotopes, like we are to oil and gasoline. Each day 1500 people die of cancer. What are we waiting for? Restart FFTF.

2497-2 — However, there are those who are reporting half-truths and lies in an effort to sway public opinion. I will address some of those lies here.

One, restarting the reactor would put Hanford back into plutonium production, producing more liquid waste for high-level nuclear waste tanks. The truth: plutonium-238 is used for space missions, and is not the same as plutonium-239, which is used in nuclear weapons. Pu-238 cannot be used to make bombs.

Also, the proposed new missions will not add a single drop of high-level waste to the tanks at Hanford, nor will it impact the Columbia River. The FFTF waste minimization plan was developed in consultation with the Washington State Department of Ecology and the Oregon Office of Energy.

Another lie: restarting FFTF will delay and take money away from Hanford cleanup. The truth: restarting FFTF will have no impact whatsoever with Hanford cleanup funding. FFTF is funded through a completely different program from the cleanup budget. And as a member of the Appropriations Committee, I am committed to fight for funding in the environmental management program for Hanford cleanup. Make no mistake, however. If DOE decides to shut down the FFTF, decommissioning activity, which will become part of Hanford cleanup, will be prioritized along with all the other more pressing problems of Hanford cleanup. One last lie: restarting the FFTF will have enormous environmental consequences for the Pacific Northwest. The truth: FFTF will produce no high-level waste. In full operation, producing life-saving isotopes for the entire nation, FFTF will produce low-level waste comparable to about four medical and research institutions like the University of Washington. Currently, the State of Oregon sends its low-level waste to the commercial repository at Hanford. It annually sends twenty-two times the waste FFTF would produce. In thirty-five years of operation, FFTF would produce a small amount of spent nuclear fuel, equivalent to .015 percent of our nation's inventory. The benefits of operating the FFTF to produce desperately needed isotopes are obvious.

Response to Commentor No. 2497

2497-2: DOE notes the commentor's views and observations. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2504: Judith Hine

2504-1 — I have discovered the suitable geological facility. It is the black hole into which the information required for this to be a programmatic environmental impact statement has fallen. This is not an environment impact statement.... We don't know to what extent comments here [at the hearing] modified this document.

I think I don't know what frightens me more: the possibility, the magnitude of the possibility of harm to the people of the Northwest should a highly unlikely accident occur — one chance in a large number, but look at the magnitude — or the magnitude of the discrepancy between what this document purports to be and what the Department and the public and the Secretary need to make a rational, honest, open decision about whether FFTF should be closed as planned, as scheduled, or reopened on the basis of — some people say half-truths; I say half-information. The PEIS, at best, from this, is preliminary environmental impact statement.

2504-2 — Possibly [this would be an EIS] with addenda that are not available, possibly with corrections that were made verbally on the fly about the research isotopes not being a factor, it's still in the report, about agricultural use of radioisotopes, the question about the irradiation of food, still in there.

Response to Commentor No. 2504

2504-1: The NI PEIS is adequate and provides sufficient scope and detail on which to make mission decisions relative to the environmental impacts of alternatives. 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. 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. In preparing the Draft NI PEIS, DOE carefully considered all scoping comments received from the public (see Section 1.4 of Volume 1 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. 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.

2504-2: DOE assumes the commentor is referring to the cost and nonproliferation reports when she refers to "addenda." The cost and nonproliferation reports are separate, ancillary documents that were made available to the public since the issuance of the Draft NI PEIS. 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2504: Judith Hine (Cont'd)

Response to Commentor No. 2504

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. 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. DOE agrees that the FFTF's large size and configuration are not particularly well suited for the singular purpose of producing small quantities of various research isotopes. However, sustained operation of the FFTF for the production 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. The availability of radioisotopes for the purposes of agricultural use or food irradiation is not the focus of DOE's proposed action. Although radiation sterilization of food is a possible application for certain industrial radioisotopes, including Cesium-137 and Cobalt-60, DOE does not anticipate a similar need for increased production of radioisotopes used for either of these purposes.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2496: Wenonah Hauter

2496-1 — I think you should have the — in keeping with the spirit of public, you should hold your presentation until the public speaks. Let the public speak first.

Response to Commentor No. 2496

2496-1: The purpose of DOE's presentation at the Portland Oregon, public hearing and at all of the NI PEIS public hearings was to provide an overview of the Draft NI PEIS as a basis for facilitating relevant discussion and public input. Therefore, it is customary to present this background information before the start of the formal comment process.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Russ Hulvey
Association of Washington Businesses*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 19.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Chris Jackins

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 275.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Dave Johnson
Heart of America Northwest*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 273.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2498: Ken Kadlec

Representative for U.S. Representatives Jim McDermott, Brian Baird, Earl Blumenauer, Peter A. DeFazio, Darlene Hooley, Adam Smith, David Wu; and for U.S. Senator Ron Wyden

2498-1 — The letter focuses primarily on what is left out of the draft EIS — namely, what we do with the waste ...

2498-2 — . . .the actual true cost of restarting the FFTF, the impact on our nation's nonproliferation policies, and most basically, an assessment of the need and suitability of FFTF for its purported missions. To leave the discussion of these areas to separate reports, delivered after the hearings, makes a sham of the NEPA process. You owe the citizens of this state and our nation greater accountability.

2498-3 — I would like to point out the purpose of the draft EIS is to define the role of the FFTF in research, not commercial production, and sets forth four — originally, instead of three — possible research missions for the start of the FFTF. Your own research advisory committee and NASA have stated that FFTF was not suited to three of these missions. The only remaining is for the “unspecified” missions. This leaves us commenting on a draft EIS for an unspecified mission with an unspecified need, with an unspecified cost, with unspecified environmental impacts. It sounds like a project in search of a mission.

2498-4 — If I heard you correctly tonight, the decision has been made, and that you can make the decision independent of the decision of Secretary Richardson.

2498-5 — Let me leave you with the suggestion that you do have a mission at Hanford: it's called cleanup. That's a specified mission. That's a specified mission, and you've had it for twelve years now. Let's get on with it

2498-6 — ... let's put FFTF to bed.

Response to Commentor No. 2498

2498-1: DOE notes the commentor's concern regarding waste management. Management of wastes that would be generated under implementation of Alternative 1, Restart FFTF, is discussed in Section 4.3 of Volume 1 (e.g., see Section 4.3.1.1.13). Section 4.3.1.1.13 was revised to clarify that, the Hanford waste management infrastructure is analyzed in this PEIS for the management of waste resulting from FFTF restart and operation. This analysis is consistent with policy and DOE Order 435.1, that DOE radioactive waste shall be treated, stored, and in the case of low-level waste, disposed of at the site where the waste is generated, if practical; or at another DOE facility. However, if DOE determines that use of the Hanford waste management infrastructure or other DOE sites is not practical or cost effective, DOE may issue an exemption under DOE Order 435.1 for the use of non-DOE facilities (i.e., commercial facilities) to store, treat, and dispose of such waste generated from the restart and operation of FFTF. In addition, Section 4.3.3.1.13 and 4.4.3.1.13 also address the potential impacts associated with the waste generated from the target fabrication and processing in FMEF and how this waste would be managed at the site.

2498-2: 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. Consistent with its mandates under the Atomic Energy Act, DOE is proposing this enhancement of its 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2498: Ken Kadlec (Cont'd)

Response to Commentor No. 2498

Purpose and need are discussed in Chapter 1 of Volume 1. The NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 and that of the Expert Panel are discussed in Chapter 1 relative to medical and industrial isotope production mission. DOE has taken the Expert Panel and NERAC report recommendations under consideration in developing the range of alternatives, including Alternative 1, Restart FFTF, 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.

2498-3: The only missions being considered by DOE are the three that are analyzed in the NI PEIS, which are the production of isotopes for medical research, and industrial uses; plutonium production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application. No "unspecified" missions are being considered. DOE's production and sale of radioisotopes fall into two categories—"commercial" and "research" and both types of isotope production are considered under the proposed actions. Commercial radioisotopes are those that are produced in large, bulk quantities and sold to pharmaceutical companies or distributors, or to equipment or sealed source manufacturers. Examples of commercial radioisotopes produced by DOE include strontium-82 and germanium-68 for medical applications, and iridium-192 and californium-252 for industrial applications. DOE only produces commercial isotopes when there is no U.S. private sector capability or when foreign sources do not have the capacity to meet U.S. needs reliably. In contrast, research radioisotopes are typically produced and sold in small quantities in response to specialty orders from researchers preparing experiments in the field of medicine, with small quantities of these radioisotopes also purchased by industrial researchers. Because small-quantity production of research isotopes is not financially attractive to private-sector producers and is generally not undertaken, DOE attempts to provide all research radioisotopes that are requested, subject to production capability, inventory, and financial constraints. As successful application of a specific research isotope is established, the production and sales of that radioisotope may shift from research to commercial status. In recent years, over 95 percent of DOE's sales of radioisotopes by dollar volume were commercial and 5 percent have been for research. Additional discussion of how DOE's isotope program fits into the overall U.S. and foreign isotope production capabilities was incorporated into Section 1.2.1 of Volume 1. 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2498: Ken Kadlec (Cont'd)

Response to Commentor No. 2498

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. 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 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 a RTG 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.

2498-4: No final decisions have been made with regard to the alternatives or to the facilities and locations evaluated to fulfill the requirements of the proposed actions. 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 includes a discussion of DOE's justifications for selecting it. It is the Secretary of Energy who will make the programmatic decisions with respect to the alternatives presented in this NI PEIS to accomplish the DOE missions. Decisions made will be published in the Record of Decision no sooner than 30 days after publication of this NI PEIS. All pertinent information and public input will be provided to the Secretary so that he may make an informed and unbiased decision with respect to the alternatives presented in this NI PEIS.

2498-5: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the progress of 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2498: Ken Kadlec (Cont'd)

Response to Commentor No. 2498

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. 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.

2498-6: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Bruce Klos

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 406.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Sally Lamson

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 280.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2521: Hyun Lee

2521-1 — I oppose FFTF restart.

2521-2 — Restart of FFTF will lead to generation of what this draft EIS has referred to as aqueous high-activity waste, which sounds an awful lot like liquid high-level nuclear waste, to me, that will be sent to what's referred to as the evaporator tank feed while awaiting treatment and vitrification for disposal, which looks like a tank in the FMEF, in that schematic on page S-17. So that sounds like this waste is going to be stored in Hanford FMEF until about 2007, when the vit-plants will ostensibly be operable and a new contractor will have been, hopefully, found, I guess. Until then, which would be — this stuff would sit around for, maybe, like close to seven years. This would violate state and federal laws on hazardous waste disposal, which only allows a few months for the stuff to be stored before it has to be disposed of in some permanent way. Again, this is illegal, violating Washington State and federal law.

2521-3 — Just the possibility of FFTF restart has significantly delayed Hanford cleanup. I mention this in the context of the 325 and the 306-E buildings in the 300 Area, which are being kept erect until — for FFTF support. These are two highly contaminated buildings, with a long history of mishaps and radiation releases that date back to the '60s, and possibly the '50s.

2521-4 — Shipping FFTF waste to commercial disposal facilities, which was something that was mentioned at the last two hearings, violates existing U.S. DOE policy, that requires waste to be sent only to NRC-licensed facilities. You can see this in 64 Federal Register 1216. Thus far, only U.S. Ecology has been licensed in that capacity. And disposal of FFTF low-level and mixed waste at U.S. Ecology would violate the compact between the states, which Oregon has a veto in. Furthermore, disposing of FFTF at these type of facilities would just open the door to U.S. DOE becoming one of the biggest PRPs in Superfund history, which would probably ramp up FFTF operation costs quite a bit.

2521-5 — Having spoken to a number of people who have been here [at the hearings], who were planning to come here, they've just voiced a lot of frustration that — not being heard, that their message hasn't been heard by policy-makers.

Response to Commentor No. 2521

2521-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2521-2: 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. 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. High-level radioactive waste would not be generated from merely operating FFTF. The use of proposed alternative facilities associated with reprocessing of 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. The 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. 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 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.

2521-3: The commentor's concerns about delays in Hanford cleanup are noted. 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 a large inventory of radionuclides associated with ongoing activities at the facility, the building is not contaminated in worker accessible areas. Operations at the 325 Building are conducted in accordance with applicable federal and state regulations and appropriate DOE Orders. 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2521: Hyun Lee (Cont'd)

Response to Commentor No. 2521

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 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 remains committed to upholding this agreement.

2521-4: DOE Order 435.1 "Waste Management" gives responsibility to the DOE Field Element Managers to approve exemptions for use of non-DOE facilities for storage, treatment or disposal of DOE radioactive waste based on certain requirements. One of these requirements is that the facility must have the necessary permits, licenses, and approvals for the specific waste. As discussed in DOE's "Commercial Disposal Policy Analysis for Low Level and Mixed Low-Level Wastes" dated March 9, 1999, there are three commercial low-level radioactive waste disposal facilities (i.e., Envirocare of Utah; Barnwell, South Carolina; and US Ecology, Richland, Washington) which are currently operating and licensed to receive low level radioactive waste. Envirocare of Utah also has a permit to receive RCRA hazardous wastes. DOE has and is currently disposing of low level radioactive waste and mixed low-level radioactive waste at Enirocare of Utah and has sent low-level radioactive waste to Barnwell, South Carolina. In June 1995, US Ecology submitted an unsolicited proposal to DOE for the disposal of DOE waste at the US Ecology facility. In November 1995, the State of Washington informed US Ecology and DOE that the State would allow the disposal of DOE waste at the facility subject to certain conditions.

2521-5: 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. In addition to the hearings, DOE provided opportunity to the public to comment on the Draft NI PEIS through the U.S. mail, e-mail, a toll-free fax number, and a toll-free phone number. DOE gave equal consideration to all comments. In preparing the Final NI PEIS, DOE carefully considered comments received from the public.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

***Commentor: Nick Licata
Seattle City Council***

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 2061.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2535: Richard Locke

2535-1 — I have a particular interest in the FFTF in as much as it's an asset in our battle, I believe, to fight cancer in this country.

Response to Commentor No. 2535

2535-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

**Commentor No. 2508: Fred Miller
Peace Action**

2508-1 — ... they [owner of the fuel] quoted from the [FRR] final environmental impact statement in that matter: "In countries where material control and accounting or physical accounting systems are not sufficiently rigorous, there is a risk of diversion or threat of theft of such materials. In addition, even in countries with effective nuclear test weapons nonproliferation commitments, the presence of unneeded stocks of plutonium could raise security concerns on the part of neighboring countries." I would submit that the United States is in the former category, not the latter, given the huge volume of plutonium that the DOE cannot account for. And I would say that the draft PEIS is incomplete until it does address very definitively the proliferation concerns that we're raising.

2508-2 — The Department of Energy has — and Hanford in particular has a long history of dishonesty, carelessness, neglect. And when you're saying definitively that there is, at most, this or that safety hazard, you are relying upon the estimates from an organization that in the past has lied in their estimates of similar hazards. We have to assume that they are not more honest than they were in the past. We have to assume that they are not more careful than they were in the past. Otherwise, we're going to come up with extravagant claims. And the extravagant claims that they've made in the past have not been fulfilled.

2508-3 — I oppose restart of the Fast Flux Test Facility for production of plutonium-238.

2508-4 — When I gave comments in the scoping process, I suggested that perhaps the biggest inventory of plutonium-238 in the United States is in the nuclear weapons arsenal. A warhead on any of our SLBMs or ICBMs has an RTG, and we have many of those surplus. You have not analyzed what happened to those and to that net stockpile of plutonium, which could possibly meet any NASA needs, no matter whose numbers you choose for many, many years.

Response to Commentor No. 2508

2508-1: The plutonium being considered for production in this NI PEIS is plutonium-238 which is not an isotope of plutonium that is used in nuclear weapons. The production of plutonium-238 does not present a nonproliferation concern. DOE developed a separate Nuclear Infrastructure Nonproliferation Impact Assessment, published in September, 2000, that analyzed the nonproliferation impacts of the actions considered in this PEIS and found that, there are currently no U.S. nonproliferation policies, laws, regulations or international agreements that preclude the use of any of the facilities in the manner described in the Draft NI PEIS. Although this policy analysis is not required under NEPA, DOE believes it to be an essential element in the decision making process for the DOE nuclear infrastructure, and has included a summary of the Nuclear Infrastructure Nonproliferation Impact Assessment in Appendix Q in the Final NI PEIS. It is also available on the DOE NE web site (<http://www.nuclear.gov>).

2508-2: Comment noted.

2508-3: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2508-4: Small radioisotope thermoelectric generators (RTGs) using plutonium-238 are used to power electronic systems on some strategic weapons, some of which have become surplus due to strategic arms reductions. Although the exact configuration of these RTGs is classified, the amount of plutonium-238 in each unit is relatively small and the assay of the plutonium-238 is unacceptable (too low) for use in RTGs or radioisotope heater units for NASA spacecraft. Therefore, it is not a viable source for consideration in the NI PEIS.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Jim Montano

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 261.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Rick Mounce

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 278.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2541: Paul Myer

2541-1 — I want to question the DOE's assertion that there is a near term and urgent need by NASA for Pu-238....

NASA is planning two Rovers in 2003, but they are solar powered and battery powered and not 238 powered. They don't use RTGs....

Part of the reason they're probably not talking about these things [NASA missions] is that the power systems that they would need have not yet been developed, and if you're talking about missions out there around 2010 or so, there will be advancements, the need for 238 may be very small, if at all. And to start up this reactor now on that kind of a flimsy thing appears to me to be a, as it's been said before, a process in search of a mission.

2541-2 — NASA is very concerned about putting such contaminants on the surface of any planet other than Earth. We seem to be willing to live with it here.

Response to Commentor No. 2541

2541-1: The commentor should note that DOE is providing NASA, plutonium-238 fueled heater units for the rover 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 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. 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. 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.

2541-2: DOE notes the commentor's view on the effect of NASA's space missions on other planets. 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. These radioisotope power systems have been used for almost 40 years, and have repeatedly demonstrated their performance, safety, and reliability in various

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2541: Paul Myer (Cont'd)

Response to Commentor No. 2541

NASA space missions. NASA establishes the need and requirements for space missions and undergoes a thorough NEPA evaluation for each launch.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2546: Charles Nelson

2546-1 — I'm a firm believer that FFTF can save lives and could possibly save my life some day, if I'm unfortunate enough to come down with cancer, and my son's life which is more important than anything in the world.

And I would hope that the Department of Energy would see that and would restart the FFTF reactor. Of, if not FFTF reactor, whatever is necessary to produce these isotopes that makes it one minute closer to saving my son's life.

Response to Commentor No. 2546

2546-1: DOE notes the commentor's support for Alternative 1, Restart FFTF, or whatever is necessary to produce medical isotopes.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: *Hans Nesse*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 272.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2548: Pennie S. O'Grady

2548-1 — I'm very concerned that the hearings are not being done in a way that is truly no preference. Not knowing a lot of details, I walked in cold, and I saw a preference [for FFTF].

2548-2 — ... the perspective I do come from is an alternative five and I would really like to feel that truly the truth and that, you know, my concerns are going to be equally important.

2548-3 — I have great concern that there's a lot of corporate use of plutonium-238 and that use is for profits for large corporations and big industry in the medical industry and NASA and space technology and Boeing and all of that.

And I would like to have a government of, by and for the people so that the Department of Energy is truly responsive to all of the people and does not weigh the concerns of industry over the concerns of the many citizens, because I live in what is supposed to be a democracy and I'd like to uphold the principles of our democracy.

2548-4 — I am not for anything which risks the ultimate health and well being of our citizens, my children, their children.

I want to ask what's causing the level of cancer and ill health in our population in the first place.... We need to look at solutions to the underlying problems that are presumably addressed by the FFTF and its products, and not use a supposedly low risk technology that has devastating potential consequences should our human infallibility kick in.

Response to Commentor No. 2548

2548-1: DOE has made every effort to make this NI PEIS objective. 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. 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.

2548-2: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. DOE appreciates all comments it receives on the NI PEIS and all are given equal consideration.

2548-3: DOE notes commentor's view. DOE policy encourages effective public participation in its decisionmaking 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.

2548-4: The commentor's concerns about finding the causes of and addressing the underlying problems associated with cancer are noted. Chapter 4 of Volume 1 and Appendixes H through J discuss radiological exposures to the public that would be expected to result from implementation of the nuclear infrastructure alternatives. While radiation is a known cause of cancer, the analysis in Chapter 4 provides the results of the evaluation of potential health impacts that would be expected to result from a range of reasonable alternatives (Alternative 1 includes restart of FFTF), including normal operations and a spectrum of accidents that included severe accidents. The evaluation of both normal operations and accidents took into consideration the potential for human error in determining the risks associated with each of the alternatives. The environmental analysis showed that radiological and nonradiological risks associated with each of these alternatives and with restarting FFTF would be small.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

***Commentor: Marlene Oliver
National Association of Cancer Patients***

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 1700.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2507: Henry Perry
Plymouth Church Peace Action Group

2507-1 — I am against the further use of nuclear weapons or nuclear energy for any reason whatsoever, other than — if we could be convinced that the national security required this, I might change my mind. But I don't see that's the case. I think that, although the statements have been made here [Seattle] that this [FFTF] — the risks are very slight, I think when we're dealing with nuclear weapons, we're playing with fire, and should move away from that process as rapidly as process.

2507-2 — I think we should shut down the Fast Flux Test Facility now.

2507-3 — If we do restart it [FFTF], among other things, we're violating agreements that we've entered into before: the Tri-Party Agreement of 1995, which the state and the environmental agency and the Hanford all signed and agreed to ...

2507-4 — furthermore . . .the nonproliferation treaty. In this, we have said that we will be moving away from the development of nuclear weapons, rather than continuing with this process.

2507-5 — So I strongly oppose any plan to restart the nuclear facility [FFTF] with the cost ... that's involved.

2507-6 — So I strongly oppose any plan to restart the nuclear facility [FFTF] with the ... risk that's involved.

Response to Commentor No. 2507

2507-1: The commentor's positions on nuclear weapons, nuclear energy, and national security are noted. The scope of this Nuclear Infrastructure PEIS is limited to analysis of alternatives to fulfill the requirements of the DOE missions, which include the production of medical and industrial isotopes, the production of plutonium-238, and civilian nuclear energy research and development. The three missions, described in Section 1.2 of Volume 1, are civilian missions and are unrelated to the national defense. Neither nuclear weapons nor components for nuclear weapons would be produced under the nuclear infrastructure alternatives described in Section 2.5.

2507-2: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

2507-3: 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 fully committed to honoring this agreement. 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. Public meetings were held on this formal milestone change.

2507-4: The actions proposed in the PEIS neither support nor involve weapons material development. The alternatives evaluated in the PEIS support U.S nonproliferation policy, as confirmed in the Nuclear Infrastructure Nonproliferation Impact Assessment, published in September 2000. Although this policy analysis is not required under NEPA, it is an essential element in the decisionmaking process for the DOE nuclear infrastructure. A summary of the Nuclear Infrastructure Nonproliferation Impact Assessment is included in Appendix Q in the Final NI PEIS. It is also available on the DOE NE website (<http://www.nuclear.gov>).

2507-5: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, on the basis of cost.

2507-6: The commentor's opposition to the restart of FFTF is noted. This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF)

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor No. 2507: Henry Perry (Cont'd)
Plymouth Church Peace Action Group*

Response to Commentor No. 2507

for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2520: Sheila Pfeiffer

2520-1 — I just want you to know that it doesn't make any sense for us to say we do not know where cancer comes from. We know where it comes from. It comes from the environment, it comes from places like this, it comes from the crummy air that we breathe, the horrible water that we drink, and the groundwater that we're ruining right now. ... But we have to recognize that people are dying every day from a cancer that we created. And we can't sit here and act like we don't know where it comes from.

2520-2 — And yet here we go again, and say that we're going to start this thing [FFTF]; it's got these great isotopes and it's going to save lives. Well, it's just not true.

2520-3 — We have to start focusing on our environment. And we have to start finding alternatives to different ways of dealing with energy. We can get energy from the sun, we can get energy from the wind. We can find other ways to do it.

Response to Commentor No. 2520

2520-1: Environmental factors are a contributing factor to the incidence of cancer. Chapter 4 of Volume 1 and Appendixes H through J discuss radiological exposures to the public that would be expected to result from implementation of any of the range of reasonable alternatives analyzed in the NI PEIS. While radiation is a known cause of cancer, 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 methodology used to produce these results is intended to provide realistic results based upon our current knowledge of the health impact of low doses of radiation. The environmental analysis showed that radiological and nonradiological risks associated with restarting FFTF would be small.

2520-2: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2520-3: 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2501: Gerald Pollet
Heart of America Northwest

2501-1 — Twice in the last three years the Department of Energy had plutonium releases at Hanford. Twice in the last three years the people who will be responsible for resuming plutonium processing operations at Hanford lied to emergency responders, public officials, and the public about whether or not there were plutonium releases.

The first incident, in May of 1997, the Department of Energy officials claimed that they took nasal smears from workers exposed to the plume from the explosion at the plutonium finishing plant. And they told the public that there was no plutonium found from the workers, and no plutonium found outside the plant, and that there was no plutonium release whatsoever. Can we trust these people? What happened to their nasal smears? They were never taken, they were lost. What happened to the plutonium? It did leave the plant.

What happened in the wildfire in June of this year? Plutonium released. But you all heard on the radio and TV and read in the paper that the Department of Energy Hanford management repeatedly said no area of contamination burned — they said for days. Then they got it — had to admit that was a lie. They said, “Yes, but there was no radiation released.” No radiation released? Bill Richardson was lied to, and he relied on them. “How many times must the plutonium fly before Hanford officials are permanently replaced?” That’s what the song’s next verse should be. And the answer, my friends, is, Hanford’s plutonium is blowing in the wind. Hanford’s cancer is blowing in the wind. Now we’re talking about resuming plutonium processing, and all its attendant dangers. I don’t know who fed Senator Gorton lies and half-truths; it wasn’t our side.

2501-2 — The EIS clearly says plutonium-238 targets, quote, would be “cut up into small pieces and leached with nitric acid. Undissolved cladding would be discarded as waste.” And it continues, after treatment with tributylphosphate, quote, “the high activity” — “the high activity aqueous waste phase would then be sent to tanks awaiting treatment and vitrification for disposal.” What we are talking about — and we have the schematics from DOE’s own waste-management documents blown up at the back of the room. What we are talking about is high-level nuclear waste. You can call it something else, but it’s the same exact chemical process that was used for processing plutonium-239. What are we going to do with liquid high-activity waste awaiting vitrification? That means that some other wastes in the leaking high-level nuclear waste tanks will not get vitrified. DOE’s plan for this vitrification plant, until recently, was 10 percent of the wastes would get turned into glass by the year 2018. We’ll all be dead by the time they get around to the most dangerous tanks being vitrified. And they want to add more waste, and they want to tell you that it’s not the same. But it’s going to await vitrification for disposal, and it’s going to this place, wastes that are currently in tanks that will be leaking.

Response to Commentor No. 2501

2501-1: Previous events at other facilities (other than FFTF) are outside the scope of the NI PEIS. The emergency management and response federal laws, regulations, and executive orders that relate to the NI PEIS alternatives are provided in section 5.3 of the NI PEIS. In regards to the Hanford wildfire of 2000, the DOE Richland Operations Office, the State of Washington Department of Health, and U.S. Environmental Protection Agency performed environmental monitoring on and around the Site to assess potential radiological impacts. The wildfire did not cause a release of radioactive materials from any Hanford facilities but did result in resuspension of radioactive materials which were already in the environment. The very low levels of radioactive materials that were resuspended were slightly above natural background levels and required several days of analysis to quantify. Information on this event has been made available to the public and can be accessed at <http://www.Hanford.gov/envmon/indes.html>. This site also provides a link to information on the independent offsite air monitoring that was conducted by the U.S. Environmental Protection Agency. With respect to plutonium processing, no defense-mission processing or weapons material production is being proposed by this NI PEIS. All proposed activities are for civilian purposes.

2501-2: 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 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,

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2501: Gerald Pollet (Cont'd)
Heart of America Northwest

2501-3 — And you use the calciners and you add the tributylphosphate, and you have an organic phase, and you have the same risk of an explosion that the Department of Energy admitted in the early 1990s for use of the same process in the plutonium finishing plant. And the same chemicals will be involved. And you also have hydroxylamine nitrate which will be involved in the processes, which is the chemical that blew up at the plutonium finishing plant. But you don't have any mention in the environmental impact statement of events that, because they happened, by DOE's own planning guidelines, must be deemed to fall into the "likely to occur" category. But they're never mentioned.

2501-4 — Let me just close, then, by saying the other thing that is shocking is not in this EIS, is the risk of a port fire. What led the City of Seattle to pass its resolution, and the City of Tacoma, what led our brothers and sisters in the ILWU to refuse to offload these casks when it was proposed in the past, was this: shipboard fires burn for up to twenty-four hours at 2,000 degrees Fahrenheit. And that is not analyzed in this EIS.

Response to Commentor No. 2501

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 on-site 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).

2501-3: The plutonium-238 fabrication/processing facilities evaluated in the NI PEIS can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. The accident evaluation specifically accounted for the chemical processes likely to be used and considered a spectrum of accidents including internal events, external events, natural phenomena, and sabotage and terrorist activities. 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. The environmental analysis showed that the radiological and nonradiological risks associated with each of the alternatives would be small. The solvent extraction process involving the use of tributyl phosphate in hydrocarbon to separate and produce plutonium nitrate solution has been used extensively for years in the United States as well as in Japan, England, and Germany. Under a combination of off-normal conditions, there can be a reaction between nitric acid or nitrates and tributyl phosphate degradation products at higher than normal operating temperatures. Such a reaction could only occur in a heated evaporator or concentrator if there is excess tributyl phosphate impurity or residual in the plutonium nitrate liquid. This scenario will be analyzed as a potential design basis accident in developing the safety authorization basis and associated technical safety requirements for the chemical processing option chosen by DOE.

2501-4: 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2501: Gerald Pollet (Cont'd)
Heart of America Northwest

Response to Commentor No. 2501

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 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).

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Gerald Pollet
[for] U.S. Representatives Adam Smith and Brian Baird*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 158.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2533: Dorli Rainey

2533-1 — I understand that the Department of Energy has updated plans to restart the Fast Flux test facility reactor. This facility is already leaking towards the Columbia River and has not only not been cleaned up, but it had to take a back seat to funding of the restart studies and maintaining the restart capabilities.

It is time that citizens start to question the administration's commitment to cleanup of the high level nuclear waste. The new plan would only add to the nuclear waste stream at the most contaminated nuclear site in the Western world. Already, the FFTF has diverted much needed cleanup funds to keep the reactor on the standby mode pending an approved mission.

The time has come to ... seriously begin the cleanup of the existing nuclear waste now present at Hanford.

2533-2 — The time has come to permanently shut down the FFTF reactor.

Response to Commentor No. 2533

2533-1: Restarting FFTF is one of the six alternatives described in Section 2.5 of Volume 1. 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. 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 of Appendix N, 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 Volume 1, restarting 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. High-level radioactive waste would not be generated from merely operating FFTF. It is DOE's policy that all wastes be managed (i.e., treatment, storage 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. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement.

2533-2: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2530: Eliza Reed

2530-1 — Hanford — I recall the director of waste disposal, who quit Hanford, said, "I will refuse to work for an organization that is this unsafe." And in the newspaper — what, three months ago? One of the people who was the head of — a high official; I can't remember his name. He said that there was so much danger in some of the nuclear waste, that he was — a quote in the newspaper — he was amazed people weren't freaking out, that everybody wasn't freaking out. The Columbia River happens to be one of the most radioactive rivers on the planet. Salmon are getting three eyes. It's very dangerous.

2530-2 — I just want to implore the people that are the elite, the power elite that have the money, that think that they're thinking in this linear, scientific method, the progress way, to really be honest with yourself. Look in your heart. Really study the fallibility, and look at what the — how you might be rationalizing to yourself your financial gains.

2530-3 — I have complete compassion for anybody who has cancer, and I want them to have whatever means it takes for them to cure their cancer. But I do not want that means to be a cause of trillions of other people getting cancer — of many people getting cancer.

2530-4 — Stop this Fast Flux.

Response to Commentor No. 2530

2530-1: The Hanford Officials referenced above were quoted in a local (Tri Cities, Washington) newspaper as departing because of organizational and project management reasons. Workers at the Hanford Site are free to, and in fact encouraged to, disclose safety hazards associated with DOE activities. Workers are protected against reprisals by legislation applicable to the U.S. Departments of Energy and Labor. No food or water restrictions are in place outside the Hanford Reservation as a result of Hanford activities. Environmental parameters e.g. air, soil, surface water, groundwater, vegetation, animals, fish, etc.) in and around the Hanford Site are monitored on a periodic basis. Results of the measurements are available to the public in annual environmental monitoring reports.

2530-2: DOE notes the commentor's views and remarks.

2530-3: This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives including the restart of FFTF) for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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.

2530-4: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

**Commentor No. 2529: Nancy Rising
Peace Action of Washington**

2529-1 — I'm the Chairperson of Peace Action of Washington, representing almost 18,000 households in Western and Eastern Washington. Peace Action's members have been concerned about Hanford for many years. We want the DOE to stick to first things first. We want the clean up of Hanford to become the primary objective of the DOE, without distractions such as a return to production of nuclear waste for whatever purpose. Until you have shown that you can clean out all leaking or "watch list" tanks, and stabilize all high-level waste in a timely and cost-effective fashion, that is your job. Until you have identified all significant bodies of pollution on the site and downstream, and taken appropriate measures to keep them out of the Columbia and out of our environment, that is your job. Until you've thoroughly decontaminated usable land and facilities, so that they can again make positive contributions to the region and the nation, that is your job. Until Hanford workers are free to speak out when they see safety hazards, incompetence or corruption, without fear of reprisal, that is your job. Other priorities can wait.

2529-2 — The Department of Energy's draft NI PEIS is neither complete nor objective. Whether deliberate or inadvertent, the cumulative effect of numerous omissions to the PEIS are unprofessional and bias the PEIS in favor of a de-facto "preferred alternative," the restart of the Fast Flux Reactor. Many have already been brought to your attention, especially the NASA letter should have been included in the discussion of the need for Pu-238. An omission that hasn't been mentioned since it was pointed out by Peace Action members during the scoping process is the military Pu-238 stockpile. Since the START treaty, the number of deployed nuclear warheads has been drastically reduced. Further reductions are expected. The Pu-238 used to power the electronics on these warheads can now be used to power spacecraft, if necessary. The omission of any discussion of this resource tends to bias the PEIS further in favor of restarting FFTF.

2529-3 — Although we talk a lot about science here, what really comes out is emotions and people's concerns. And I would like us to think a little about that, because I have been to a lot of these hearings, as have many of these other people. I am very, very willing to grant sincerity of belief to the people that think differently than I. But I would certainly hope that sincerity of belief could be granted to me without having people say, "You people over here want us to have cancer and don't want radioactive isotopes to be available to treat cancer." Now, I don't know where they got that idea, but if that seed is being planted over east of the mountains, I think that's a travesty and a tragedy. Because it certainly is totally untrue. We all care about each other.

2529-4 — I just want to say we hear, mostly east of the mountains, about how we don't care about jobs, and this is about jobs. I would like to point out that in the draft, in the EIS on page 4-39, and then in another place, we have the possibility of increasing, with this restart of the fast flux reactor, from 56 to a hundred jobs, total.

Response to Commentor No. 2529

2529-1: DOE notes the commentor's concerns regarding priority of the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. 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. Workers at the Hanford Site are free to, and in fact encouraged to, disclose safety hazards associated with DOE activities. Workers are protected against reprisals by legislation applicable to the U.S. Departments of Energy and Labor.

2529-2: 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. 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. DOE assumes that the commentor's reference to the "NASA letter" refers to the May 22, 2000 correspondence from NASA Headquarters to the DOE Office of Space and Defense Power Systems. This letter is in fact cited in Volume 1, Section 1.2.2 of the Draft and Final NI PEIS (Volume 1) with regard to the discussion of plutonium-238 needs for future space missions. This letter 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2529: Nancy Rising (Cont'd)
Peace Action of Washington

Response to Commentor No. 2529

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 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 was revised to clarify plutonium-238 mission needs. Both NASA letters have been included in Appendix R of this Final NI PEIS. As further suggested by the commentor, the acquisition and use of surplus defense-related plutonium-238 was not considered and is outside the scope of the non-defense missions considered in this NI PEIS. Specifically, the commentor is correct that small RTGs using plutonium-238 are used to power electronic systems on some strategic weapons, some of which have become surplus due to strategic arms reductions. Although the exact configuration of these RTGs is classified, the amount of plutonium-238 in each unit is relatively small and the assay of the plutonium-238 is much lower than that needed for use in NASA spacecraft.

2529-3: DOE notes the commentor's views and remarks.

2529-4: DOE is not considering restarting FFTF for the purpose of creating jobs, although socioeconomic impacts (e.g., number of new jobs created) are addressed in Sections 4.3.1.1.8, 4.3.2.1.8, and 4.3.3.1.8 for Alternative 1, Restart FFTF, Options 1 and 4, 2 and 5, and 3 and 6, respectively. The Record of Decision for the 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2536: Jennifer Rubinstein

2536-1 — I oppose restarting the FFTF reactor.

2536-2 — I believe that adding more waste to the Hanford waste tanks is dangerous and it cannot be justified by the development of isotopes for civilian purposes.

2536-3 — So far as the PEIS is concerned, I regret the omission of crucial facts and data. For example, the Washington State Medical Association says there is no need for the FFTF reactor for medical isotopes. A similar finding emerged from the DOE's own subcommittee.

2536-4 — NASA is on record as saying they do not need plutonium-238 for a space mission and yet this purported need has been used by DOE to justify restarting the FFTF.

2536-5 — I also find unconvincing DOE's assertions that money will not be diverted from the Hanford clean-up.

2536-6 — . . .my husband worked for ten years at Hanford and died of cancer in 1993 at age 57. And while I don't know for a fact that the situation at Hanford caused his death, it certainly is a possibility that it led to his cancer and so I do find somewhat upsetting the linkage of the FFTF startup with the war on cancer without considering how these nuclear products contribute to the etiology of cancer itself.

Response to Commentor No. 2536

2536-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

2536-2: DOE notes the commentor's concern regarding waste generation. High level radioactive waste would not be generated from the processing of targets for medical isotope production. Section 4.3.1.1.13 of the NI PEIS provides information on the waste generated from medical isotope production at RPL/306-E.

2536-3: DOE assumes that the commentor is referring to 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. These conclusions 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.

2536-4: DOE assumes that the commentor is referring to the May 22, 2000, letter from NASA Headquarters to the DOE Office of Space and Defense Power Systems. This correspondence 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, 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2536: Jennifer Rubinstein (Cont'd)

Response to Commentor No. 2536

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.

2536-5: 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 of Appendix N, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

2536-6: This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives (including the restart of FFTF) for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. 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. 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 Department of Energy 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 Department of Energy 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, the most likely impact of the use of these facilities is no increase in cancer fatalities among the facility workers. For example in Alternative 1 option 1, all of the activities (target irradiation and processing) occur at Hanford facilities. As shown in Sections 4.3.1.1.9 and 4.3.2.1.9, the expected consequences are less than one additional fatal cancer among the workforce; that is, no additional fatal cancers are expected.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2505: George Ruge

2505-1 — I strongly urge the Department of Energy to restart the FFTF, to support the three missions described in the nuclear infrastructure PEIS, because it is the best technical and the lowest-cost option for meeting the identified important needs.

2505-2 — In fact, contrary to the statements made by Senator Wyden and others in a letter from NASA to DOE dated May 22nd, 2000, it was affirmed that the NASA deep-space systems programs would transition from small isotope, radioisotope thermoelectric generators, to the more efficient Sterling radioisotope power systems. This system also uses plutonium-238 as its power source, a fact which Senator Wyden neglected to mention in his letter either due to being misinformed, ignorance on his part and/or his staff, or outright deception. In any event, this letter, which contains numerous misstatements, is a disservice to the citizens of the Pacific Northwest. I urge DOE to consider all the available information related to the nuclear infrastructure PEIS, without political bias or undue consideration of anti-nuclear rhetoric.

2505-3 — There are significant technical issues and uncertainties associated with plutonium-238 production using either the new accelerator or the new reactor alternatives, as described in the nuclear infrastructure PEIS.

For example, it is unlikely that they will have — it is likely that they will have difficulty producing material at the purity level required by NASA. While these issues might eventually be resolved, their solution is likely to require significant time and funding.

2505-4 — There is a comment that I would like to make specific to the PEIS: the document needs to be updated to reflect NASA's recent change to the Sterling generator, which still requires plutonium-238.

Response to Commentor No. 2505

2505-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

2505-2: DOE notes the commentor's remarks regarding the May 22, 2000 correspondence from NASA Headquarters to the DOE Office of Space and Defense Power Systems. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000, letter to DOE that large RTGs (which require relatively larger quantities of plutonium-238) be maintained as backup. Section 1.2.2 of Volume 1 was revised to clarify plutonium-238 mission needs. Also, as referenced by the commentor, the consideration and selection of facilities and site locations for accomplishing expanded civilian nuclear energy research and development and isotope production missions is not a political decision and will not be biased. 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. 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.

2505-3: Because of the unique attributes associated with each of the irradiation facility alternatives, the purity of the plutonium-238 produced will differ. In irradiating neptunium-237 target material to produce plutonium-238, other plutonium isotopes are also produced as impurities within the target material. These include plutonium-236 and plutonium-239. Of these impurities, plutonium-236 is important because daughter products resulting from radioactive decay of the plutonium-236 give off high-energy gamma rays which are difficult to shield. The plutonium-236 level present at the end of irradiation can be reduced by allowing it to decay over a period of time prior to processing or prior to use in fabricating heat sources. Plutonium-238 can also be blended with existing plutonium-238 stock that has less than 1 part per million plutonium-236 to lower the plutonium-236 concentration. The combination of plutonium-236 decay with blending as necessary would result in a plutonium-238 product that would meet NASA's needs, provided the plutonium-236 level is relatively low at the end of irradiation. The alternative selected to produce plutonium-238 will be required to ensure this impurity requirement is met. As detailed planning for a selected alternative progresses, this could result in the need for target design or facility modifications. The Record of Decision will be based on a number of factors including environmental impacts, costs, nonproliferation issues, schedules, technical assurance, public input, policy, and program objectives.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2505: George Ruge (Cont'd)

Response to Commentor No. 2505

2505-4: 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Marilyn Savage
United Staff Nurses Union*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 335.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

*Commentor: Sarah Schmidt
Heart of America Northwest*

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 279.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2540: Agnes Schmoe

2540-1 — We've not yet cleaned up the mess that we've created over the last 55 or more years replacing the Columbia River. If the highest priority of the U.S. Department of Energy was cleanup, I believe it would have already been done.

2540-2 — There are other ways to fight cancer that doesn't create a lot more cancer-causing materials.

2540-3 — We, the USA, said we would destroy our huge stock of nuclear weapons. So far this has not been happening. The Trident subs, for example, have bombs equaling eight Hiroshima bombs. Some are to be mothballed but others upgraded four times. These are not weapons. They are destructive to ourselves as to any other person in the world as well as animals and everything else on the planet. If we had only two it would be too many. I don't know how many we have but it's a huge number.

2540-4 — I do not believe the FFTF should be restarted.

2540-5 — Until we have something that will be "nuke off" and destroy the nuclear waste, I believe we have absolutely no business in creating any more.

Response to Commentor No. 2540

2540-1: Restoration of the Hanford Site and waste management activities are the primary missions at Hanford. Although beyond the scope of this NI PEIS ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities. 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.

2540-2: DOE notes the commentor's concern regarding cancer-causing materials generation. 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. This PEIS has provided an estimate of the incremental potential human health impacts associated with a reasonable range of alternatives for the production of isotopes for medical uses, research and development, and as heat sources for radioisotope power systems. The methodology used is intended to provide realistic results based upon our current knowledge of the health impact of low doses of radiation. 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 of any of the analyzed 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

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2540: Agnes Schmoe (Cont'd)

Response to Commentor No. 2540

nonradiological risks associated with each of the alternatives and with restarting FFTF would be small.

- 2540-3:** DOE notes the commentor's interest in reducing the arsenal of nuclear weapons, although issues of nuclear weapons production, dismantlement of weapons, and elimination of weapons systems are beyond the scope of this Nuclear Infrastructure PEIS. The DOE missions addressed in this EIS are civilian nuclear energy missions and are not defense-related.
- 2540-4:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.
- 2540-5:** DOE notes the commentor's concern regarding waste generation and treatment. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2510: Peggy Scott

2510-1 — I feel the area [Hanford] should be cleaned up.

2510-2 — I also feel that medical isotopes is important....

I only needed to look at one cancer education source to come to grips with how staggering the health impacts will be to our future and our children's future. Each and every one of us has a one in three chance of being diagnosed with cancer during our lifetime. In the year 2000 alone, over one million people in the U.S. will be diagnosed with cancer. With the treatments we have today, their overall chance of survival is only a little more than fifty-fifty. Every person in this room will be heartbreakingly aware of the painful truth of these statistics at some time.

But FFTF can change this story for many....this story will be a tragedy for many if FFTF does not produce these isotopes.

Response to Commentor No. 2510

2510-1: 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.

2510-2: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2503: Stan Scott

2503-1 — I would like to rebut some of the inflammatory rhetoric offered by anti-nuclear organizations such as Heart of America Northwest, Columbia River-Keeper, and Physicians for Social Responsibility.... The anti-nuclear groups love this report [NERAC] because they can pull little sound bites out of it and have you believe that the whole report backs the fact that the FFTF isn't a viable source. Well, the report says that the FFTF is not a viable source of research radioisotopes. Now, of course, this is taken out of context.... In reality, if the FFTF and associated PNNL facilities are operated to produce large quantities of isotopes, the production of research quantities of isotopes will be done at almost no cost, and essentially have a free ride with the other missions performed at the FFTF....

A couple of other comments I've read in some of the propaganda I've seen: "Supplies of medical isotopes are readily available from Canada and non-DOE sources in the U.S." Yes, it is true that certain isotopes are readily available, but most are not.... When talking about the large-scale production of isotopes, Heart of America Northwest says, "Commercial suppliers and hospitals with cyclotrons can produce these and meet the projected need." This might make you think that the commercial or private sector is producing lots of isotopes. This statement is another half-truth. The fact is that the only non-DOE reactor in the U.S. that is currently producing medical isotopes is a small 10-megawatt reactor at the University of Missouri. The rest of the commercial isotope production actually occurs at DOE reactors. The FFTF operated, it would be the key source for these commercial suppliers.

Response to Commentor No. 2503

2503-1: DOE notes the commentor's views and observations regarding the NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000 and on the production and availability of research and medical isotopes.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

**Commentor No. 2532: Don Segna
Nuclear Medicine Research Council**

2532-1 — Also, I've heard that — several times, that we got to buy the Pu-238 from the Russians. Now, to me, that's us taxpayers paying for nuclear technology in foreign countries. And also we ought to buy from the Canadians. And there was one case where Dr. Darrell Fisher couldn't get his iso- — he had to go to Peru. They've got reactors in Peru. We then paid for a little bit of nuclear technology in a foreign country. And we need the people like the watchdogs that we have here — we need them in the foreign countries, and they ain't there yet. When you do get them there, then we ought to be buying from the Russians and, you know, wherever the cheapest is. But right now, that is not the case. And I think you really need to take this back to your people to understand that we should not buy nuclear technology and keep their infrastructure going and let ours completely die, and then they can go off and do what they want with bombs.

2532-2 — What are we telling the rest of the world? We're producing weapons-grade — excuse me; by definition, it's not weapons-grade material. But every watchdog group, when they looked at FFTF producing it, said it was weapons-grade. We are now telling the rest of the world "You can produce tritium in your civilian reactors." And I think the watchdog groups have let this country down because of things like that.

Response to Commentor No. 2532

2532-1: DOE notes the commentor's opposition to buying foreign nuclear materials that are produced under conditions different than in the U.S., although the issue of foreign nuclear program safety is beyond the scope of this Nuclear Infrastructure PEIS. 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 systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted within the next several years. 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, information is limited concerning nuclear safety and domestic safeguards of foreign plutonium-238 production facilities. Therefore, 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.

2532-2: DOE notes the commentor's opposition to producing tritium in a civilian reactor, although this issue is beyond the scope of this Nuclear Infrastructure PEIS. The scope of this Nuclear Infrastructure PEIS is limited to analysis of alternatives to fulfill the requirements of the DOE missions, which include the production of medical and industrial isotopes, the production of plutonium-238, and civilian nuclear energy research and development. The three missions are civilian nuclear energy missions and are not defense-related.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2515: Valerie Shubert

2515-1 — I've heard people talking about isotopes all night long, and I have hardly heard any isotopes actually mentioned. And I just — I wish I'd brought my periodic table, because there actually is a table of them in here, in the — in the NERAC report. And I would like to know more about what specific isotopes are being needed, and how much of them are needed, and whether they can or can't be provided by other sources. And I just don't feel that's been adequately addressed.

Response to Commentor No. 2515

2515-1: For the purposes of analyses in the NI PEIS, a representative set of isotopes was selected on the basis of the recommendations of the Expert Panel, medical market forecasts, reviews of medical literature, and more than 100 types of ongoing clinical trials that use radioisotopes for the treatment of cancer and other diseases. These isotopes are listed in Table 1-1 of Volume 1, along with a brief description of their medical and or industrial applications. Unlike Table C-1 of Volume 2, which lists representative isotopes that could be produced using FFTF, the isotopes listed in Table 1-1 include both reactor- and accelerator- produced isotopes. The absence of any specific isotope from the Table 1-1 should not be interpreted to mean that it would not be considered for production under the proposed action. Rather, these isotopes are a representative sample of possible isotopes which could be produced, and DOE expects that the actual isotopes and specific amounts produced as a result of the proposed action would vary from year to year in response to the focus of clinical research and the specific market needs occurring at that time. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2524: Dane Spencer

2524-1 — I do not advocate the restart of the flux reactor.

2524-2 — I think personally I might be more open to having you restart the reactor, if first you did what you said you were going to do in the first place, which was to cleanup the Hanford Nuclear Reservation. Now, you can't — you can't do both at the same time. It directs time, energy, and money away from the priority, which is to cleanup the nuclear reservation.... I had the harebrained idea of stopping in at the Hanford Reservation, because I'd never been there....And that happened to be the week when the wildfires had gone over Area 300, which is right where we were. And then the next day I read in the paper how the plutonium had been released into the air. So me and my wife had been exposed to your plutonium. And so I'm wondering if you will treat me and my wife when you use these isotopes, when you start this new reactor.... We want to know the truth. We've been lied to in the past. We don't believe you.

2524-3 — About 1993 we were talking about starting the flux reactor to produce tritium. No, we're not talking about that now, but I'm not sure why. Why has that all of a sudden gone away as an issue? Has it just kind of gone under the rug, and we're not going to talk about that? Is this an issue that's been classified, and we're not going to know for sure? We'll find out.

2524-4 — Shut down the FFTF.

Response to Commentor No. 2524

2524-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and support for Alternative 5, Permanently Deactivate FFTF.

2524-2: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. No radioactive materials were "released" in the Hanford Wildfires of 2000. The DOE Richland Operations Office, the State of Washington Department of Health, and U.S. Environmental Protection Agency performed environmental monitoring on and around the Site to assess potential radiological impacts. The wildfire did not cause a release of radioactive materials from any Hanford facilities but did result in resuspension of radioactive materials which were already in the environment. The very low levels of radioactive materials that were resuspended were slightly above natural background levels and required several days of analysis to quantify. Information on this event has been made available to the public and can be accessed at <http://www.Hanford.gov/envmon/indes.html>. This site also provides a link to information on the independent offsite air monitoring that was conducted by the U.S. Environmental Protection Agency.

2524-3: DOE has no hidden agenda for weapons production or use of FFTF for classified missions. The only missions being considered are those analyzed in the NI PEIS, which are the production of isotopes for medical research, and industrial uses; plutonium production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application. DOE addressed tritium production in the "Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling" (DOE/EIS-0161) and subsequent Record of Decision (60 FR 63878). On December 22, 1998, the Secretary of Energy announced his selection of the commercial light water reactor as the primary tritium supply and that an accelerator would be developed but not constructed. In addition, DOE decided that FFTF would have no role in tritium supply plans.

2524-4: See response to comment 2524-1.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2509: Margaret T. Swartzman

2509-1 — ... we have an existing problem at Hanford that the public has high priority, first priority to have addressed. That is the existing nuclear material that we know is leaking and is a problem. We want to address that. And there, connected with that, is the concern of the public that monies that have been associated with the FFTF have drained from that fund of cleanup. Now, I don't know whether that is accurate or not. But my concern and my voice is to make sure that you make sure. You are our protector. And I want to make sure that you are examining that. If you're — if you're holding FFTF on line and that money is taken from cleanup, then I think you're doing the citizens of the state a disservice, because that's the purpose that we voted for that money. You know, we designated that money for cleanup. And that is why organizations like Heart of America appeal to us, because they — whether they have information that is correct or not, we feel at least they are examining what is going on and creating the opportunity for these dialogues.

Response to Commentor No. 2509

2509-1: 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. 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.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2517: Tim Takaro
Washington Physicians for Social Responsibility

2517-1 — Tragically, about 1500 people in the United States will die of cancer today and tomorrow and for the foreseeable future. Unfortunately, FFTF cannot save them. To suggest such is manipulative, and it plays to the fears that we all have of cancer, since each of us has likely been affected by cancer, either in ourselves or in our loved ones.

2517-2 — The National Academy of Science Institute of Medicine report on the nation's isotope needs in 1995 specifically recommended against using existing reactors because they were not designed for this use.

2517-3 — The PEIS we are discussing tonight has an Alternative 4, a so-called new reactor, which is also a straw man. It doesn't take a nuclear physicist to know that a reactor designed forty years after the FFTF, specifically for the production of medical isotopes, would perform better than the FFTF for that mission. The National Academy of Sciences settled that question five years ago.

Response to Commentor No. 2517

2517-1: DOE notes the commentor's view.

2517-2: The FFTF started operation in 1982. Although it was originally designed and operated as a science test bed for U.S. liquid metal fast reactor programs, it also produced a wide variety of medical isotopes. In addition HFIR, ATR, and other foreign and domestic reactors, not designed for medical isotope production, also produce a very wide variety of medical isotopes.

2517-3: The commentor's preference for Alternative 4, Construct New Reactor, over Alternative 1, Restart FFTF, is noted. FFTF and a new research reactor are two of the six alternatives, including no action, that were analyzed in detail in this PEIS. Each alternative offers specific technical, environmental, economic, and nonproliferation advantages and disadvantages, which will be considered by DOE in its decisionmaking process. The National Academy of Sciences has not determined that a new research reactor would perform better than FFTF for the missions described in this PEIS.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2538: Tom Tucker

2538-1 — I'm here to speak in favor of restarting the Hanford Fast Flux Test Facility.

2538-2 — I fear that opponents have an unscientific and emotional fear of waste that is left over from World War II and bomb production during the '50s and '60s, that this is contaminating their view of what we should be doing today.

2538-3 — Too often, unscientific people are victimized by propaganda into believing that a fuel rod is nothing but waste and toxic and cannot be got rid of, when in fact it can in fact — and should be — reprocessed. Irradiated fuel rods contain waste products and useful products, meaning isotopes, and an abundance of fuel that could be turned into new reactor fuel.... I will say, however, that having people closely involved with the reprocessing of fuel rods is probably unnecessary. That is 1970's technology again. I see no reason that small fully automated, hermetically sealed modules can and should be used to reprocess radioactive fuels. These would be sealed, negative pressure, humans should be kept at a great distance using virtual reality, etc. to process the waste. This is can and should be done and I don't see the DOE doing this and I think this is my only criticism.

2538-4 — Regarding tank leaks. Who is really to blame? I worked for a company back in the 70s that asked Congress, our congressional representative, please let us build double walled tanks to stop the leaking, to replace those old single walled iron tanks. And you know what Congress said? We can't afford it. ... We should make the right decision now, put in the double walled tanks, reprocessed fuel, etc.

Response to Commentor No. 2538

2538-1: DOE notes the commentor's support of Alternative 1, Restart FFTF.

2538-2: DOE notes the commentor's views concerning the perception of waste from weapons production. The generation of wastes from the proposed action, which are small in comparison to the candidate sites' current generation rates, are discussed for each alternative in Chapter 4 of Volume 1. The additional waste generated would only have a small impact on the management of wastes at the candidate sites.

2538-3: The commentor's support of reprocessing spent nuclear fuel rods and automated technology for this reprocessing is noted. Reprocessing of spent nuclear fuel is not considered nor is it part of any actions or missions considered in this EIS.

2538-4: Hanford tank waste issues are not within the scope of this PEIS, as none of the alternatives considered would add to these waste volumes. However, underground waste tanks at Hanford built from the 1970s on are double-contained with leak detection and pumping capability. No double shell tank at Hanford has leaked. Hanford is in the last stages of transferring the pumpable portion of liquids from single shell tanks to double shell tanks.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

**Commentor No. 2525: Amber Waldref
Heart of America Northwest**

2525-1 — And the first one [issues not addressed in PEIS] is the non-proliferation issues, and it [the Summary] says that a separate nuclear infrastructure non-proliferation impacts assessment report will be completed in the summer of 2000, to also address non-proliferation issues. Well, unfortunately, this is not available to me yet. And I'm very curious about this document and what it will say, because according to U.S. non-proliferation policy, the U.S. strongly discourages the use of highly enriched uranium fuel in civilian, research, and test reactors. And in the event that a decision is made to restart FFTF, the Office of Non-Proliferation and National Security would undertake a study to consider the technical feasibility of low-enriched uranium fuel, but if that doesn't work, DOE would procure highly enriched uranium fuel. And I can't imagine how we could restart FFTF with this fuel, using this fuel, if it's strongly discouraged under U.S. non-proliferation policy.

2525-2 — The PEIS was to look at the transition of FFTF stewardship after it is deactivated, and the appropriate transition information was to be included. And a comment on this: in the cost report which was released Friday, DOE added the cost of deactivation of FFTF to each alternative, you know, of the five alternatives, except the restart of FFTF. So it's — to me, it's kind of skewed, because it makes it look like FFTF is the most economically feasible option. But yet, the additional cost of shutting it down is not included in that total cost. So it's unclear to me how this could be left out if we do intend someday to deactivate FFTF.

2525-3 — . . . restarting of FFTF and budget constraints were to be included [in the PEIS]. DOE made a commitment that implementation of the record of decision will not divert budgeted funds designated for Hanford cleanup, and that they're also supposed to include information on the Tri-Party Agreement. And I just wanted to make a comment on — some people were speaking about the Tri-Party Agreement earlier. And shutdown of FFTF was included after the initial Tri-Party Agreement. It's part of the Tri-Party Agreement. And in 1995, cleanup milestones were added, that if FFTF was to be deactivated and decommissioned — and the U.S. Department of Energy promised to shut down FFTF then, basically, and use the money saved every year on cleanup. And that just seems like good fiscal policy, to me.

Now the U.S. Department of Energy admits that its current budget for the next six years is too low to meet cleanup deadlines and commitments. So you know, I would advocate that we should use the money that we were going to use, that we're using right now for keeping FFTF on hot standby or for restarting it, for — instead, for cleanup.

2525-4 — I'm not convinced that this PEIS adequately ... demonstrates the need to restart FFTF for the proposed plutonium-238 or medical isotope production missions.

2525-5 — Shut it [FFTF] down.

Response to Commentor No. 2525

2525-1: DOE notes the nonproliferation concern expressed in the comment, and can assure that its proposed action in the PEIS supports U.S. nonproliferation goals. The alternatives evaluated in the PEIS support U.S. nonproliferation policy, as confirmed in the Nuclear Infrastructure Nonproliferation Impact Assessment, published in September 2000. Although this policy analysis is not required under NEPA, it is an essential element in the decisionmaking process. A summary of the Nuclear Infrastructure Nonproliferation Impact Assessment is included in Appendix Q in the Final NI PEIS. It is also available on the DOE NE website (<http://www.nuclear.gov>). In the event that a decision is made to restart FFTF, the first six years of operation would use existing onsite mixed oxide fuel. DOE expects that an additional 15-year supply of mixed oxide fuel in Europe, owned by Germany, would be available for FFTF. The Nuclear Infrastructure Nonproliferation Impact Assessment for the NI PEIS alternatives stated that using the two different sources of existing mixed oxide (MOX) fuel for FFTF (existing FFTF fuel and German MOX fuel) is consistent with U.S. nonproliferation policy, and, additionally, represents a safe, low-cost opportunity to reduce civilian plutonium without chemical or bulk processing, which would afford substantial nonproliferation benefits. DOE's approach to potential use of HEU in the FFTF is also consistent with U.S. nonproliferation policy. The FFTF is an existing research reactor capable of performing its research missions using HEU fuel, if MOX fuel is not available. U.S. nonproliferation policy provides for such a circumstance as part of the effort to reduce and discourage HEU use. During the period of MOX fuel use, in compliance with 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 feasible, it will be used; if found infeasible for meeting assigned missions in the FFTF, an already existing research reactor, policy would allow DOE to subsequently procure highly enriched uranium fuel for use in that facility. This approach is consistent with U.S. nonproliferation policy.

2525-2: Deactivation of FFTF is not part of implementing Alternative 1, Restart FFTF. Deactivation of FFTF is part of implementing Alternatives 2, 3, 4, and 5 and including the cost of FFTF deactivation in the implementation costs for these alternatives is appropriate. The Cost Report was structured to identify the implementation costs of the various alternatives so the Secretary of Energy would have this information along with other data for consideration.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2525: Amber Waldref (Cont'd)

Response to Commentor No. 2525

- 2525-3:** DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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. 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. Public meetings were held on this formal milestone change. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford 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 of Appendix N, implementation of the nuclear infrastructure alternatives would not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.
- 2525-4:** 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. The NI PEIS evaluates a range of reasonable alternatives for accomplishing the proposed action, one of which includes use of FFTF. Section 1.2 of Volume 1 was revised to clarify the purpose and need of the proposed action.
- 2525-5:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Marjorie Worthington

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 636.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2531: Barbara Zepeda

2531-1 — We are playing a game here, like, you know, it's us against you. We are not after the truth. And until we're after the truth, we cannot solve the problem. When you start using objective data that is produced by people who don't have an interest in the outcome, a personal interest, a monetary interest, then you'll begin to get accurate information. And until we do that, we're playing a game that none of us can win.... Objective agencies, such as the International Atomic Energy Agency, that have not been contractors or officials, could be used to approach the truth. The truth is necessary to solve these problems.

2531-2 — FFTF is said, by similar corporate interests, to be able to introduce cheap isotopes for whatever government agencies want. And a footnote to that is that the industrial isotopes are probably a cover for military production.

Response to Commentor No. 2531

2531-1: DOE notes the commentor's views on the necessity for reliance on objective, scientific data as the basis for sound decisionmaking. DOE has made every effort to make this NI PEIS objective. 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. 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. NEPA compliance is DOE's responsibility. IAEA has no role in NEPA compliance and DOE decisionmaking.

2531-2: DOE has no hidden agenda for weapons production or use of FFTF for classified missions. The only missions being considered are those stated and evaluated in the NI PEIS, which are the production of isotopes for medical, research, and industrial uses; plutonium production for future NASA space exploration missions; and U.S. nuclear research and development needs for civilian application.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Richard O. Zimmerman

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 323.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2542: Mike Zotter

2542-1 — ... It makes no sense to me to restart this reactor [FFTF] when public safety can be definitely affected. People have died from plutonium, that's pretty much a fact....

... I think anyone will tell you, any science teacher will tell you, the best way not to get cancer is to prevent it. The best way to prevent it is not to have plutonium....

2542-2 — I think most people would feel that cleanup would be a priority versus making money off of restarting this reactor.

... we already know that there is a lot of radioactive material up there and that it is leaking toward the Columbia River from 69 leaking tanks. I know this and there's no way I'd trust the Department of Energy to say that there won't be anything leaked. I mean it might not even necessarily be their fault but that's just what's going to happen and there should not be any more plutonium made at Hanford.

2542-3 — I know that if this reactor is restarted it will produce waste. That's pretty clear. Where will this waste be stored? I don't think that it will be stored completely safely and quickly because the waste that's already there has not been stored. That's pretty much known, etc. And what we need to do is make sure the waste does not hit the Columbia River until they ruin that. That is what irrigates our crops, that's where our fish come from.

2542-4 — I don't think that my kids deserve to have to make a choice to live anywhere around the Northwest if there's a spill. That's always a chance when you move this plutonium or when you produce it, there's always a chance this will happen and it's not necessary.

Response to Commentor No. 2542

2542-1: The commentor's position concerning exposure to plutonium and the restart of FFTF is noted. Chapter 4 of Volume 1 and Appendixes H through J discuss the radiological risks that would result from operation of reactors and fabrication/processing facilities, target storage, transportation activities, waste generation, and waste management. The methodology used provides realistic results based upon our current knowledge of the health impact of low doses of radiation. Both radiological and chemical impacts, including impacts from exposure to plutonium, were addressed in the analysis (See Appendix H). 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 a range of reasonable alternatives (Alternative 1 includes restart of FFTF), including normal operations and a spectrum of accidents that included severe accidents. Plutonium is the primary contributor to the health impacts from normal operations associated with the processing of irradiated neptunium targets at any of the proposed processing facilities. The environmental analysis showed that radiological and nonradiological risks associated with each of these alternatives and with restarting FFTF would be small.

2542-2: DOE notes the commentor's positions regarding the existing cleanup mission at Hanford, the risk of contamination to the Columbia River, and production of plutonium-238 at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The 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 remains committed to upholding this agreement. The missions described in Section 1.2 of Volume 1 would not impact ongoing Hanford cleanup activities. Missions delineated in the Section 1.2 of Volume 1 would not have an impact on the Columbia River. FFTF is located approximately 4.5 miles from the Columbia River. There are no discharges to the river from FFTF and no radioactive or hazardous discharges to the groundwater. Analyses presented in Chapter 4 of the NI PEIS (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) indicate that there would be no discernible impacts to groundwater or surface water quality at Hanford from operation of the existing Hanford facilities in support of the stated missions. Also, no water quality impacts would be expected as a result of permanent deactivation of FFTF (Section 4.4.1.2.4). As discussed in Section 1.2.2 of Volume 1, plutonium-238 would be produced to support NASA's Deep space missions. Plutonium-238 is not used to make nuclear weapons. Hanford tank waste issues are not within

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2542: Mike Zotter (Cont'd)

Response to Commentor No. 2542

the scope of this PEIS. None of the alternatives described in Section 2.5 of Volume 1 would add to these waste volumes.

- 2542-3:** 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 proposed activities delineated in the NI PEIS would not have an impact on the Columbia River. FFTF is located approximately 4.5 miles from the Columbia River. There are no discharges to the river from FFTF and no radioactive or hazardous discharges to the ground water. Analyses presented in Chapter 4 of the NI PEIS (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) indicate that there would be no discernible impacts to groundwater or surface water quality at Hanford from operation of the existing Hanford facilities in support of the alternatives. Also, no water quality impacts would be expected as a result of permanent deactivation of FFTF (Section 4.4.1.2.4).
- 2542-4:** The FFTF and fabrication/processing facilities at the Hanford Site 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 Alternative 1 would be small. DOE notes the commentor's concern regarding the safety of nuclear materials transportation. DOE is committed to safety and safeguards for its facilities and the transport of materials. As discussed in Appendix J of the NI PEIS, all transportation activities conducted by DOE (including SST/SGT operations discussed in Section J.3.4) would take place in accordance with U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Transportation (DOT) regulations. Transatlantic shipments would also be in accordance with the International Atomic Energy Agency (IAEA) regulations which are consistent with DOT and NRC regulations (see Section J.3.1). Type B shipping casks, which are designed to protect and retain their contents under transport accident conditions, and purpose-built ships, which are specifically designed to safely

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor No. 2542: Mike Zotter (Cont'd)

Response to Commentor No. 2542

transport casks containing radioactive materials, would be used to transport most nuclear materials covered in the NI PEIS.. Type B shipping casks have been used for thousands of shipments by road, rail, and water and there have been no cases of a major release of radioactive materials (see Section J.3.2.1). As shown in Volume 1, Section 2.7 , the transportation impacts would be small for any of the NI PEIS alternatives. Transportation risks are summarized in Section 2.7.1.6 of Volume 1 and are discussed in more detail throughout Chapter 4 and Appendix J.

Comments from the Seattle, Washington, Public Hearing (August 30, 2000)

Commentor: Frank Zucker

The oral comments were submitted in written form and are addressed in the responses to Commentor No. 302.