

Commentor No. 1411: Jan W. Anderson

Response to Commentor No. 1411

Sep-13-00 11:04A LOOKS MI

206 236 8055

P.01

JAN WRIGHT ANDERSON
FAX # 206-236-8055

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
COLETTE E BROWN US DEPARTMENT OF ENERGY	Jan W. Anderson
COMPANY:	DATE:
U.S. Department of Energy NE-50 19901 Germantown Rd Germantown MD 20874-1290	09/13/2000
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
1-877-562-4592	One
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
1-877-562-4593	
RE:	YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

Please DO NOT restart the Dangerous FFTF Nuclear Reactor at Hanford WA for any reason. I was a down winder and have many worries about Hanford and the part they played in jeopardizing my health and welfare. Please listen to my plea.



1411-1

1411-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1412: Connie Estep

9-12-2000 9:20PM FROM CRE-ST MUSEUM 509 943 1770

P. 1

Fax to 877/562-4592

Connie Estep
 850 Aaron Dr. #100
 Richland WA 99352

13 Sept 2000

Collette Brown
 Office of Nuclear Energy
 Science & Technology
 US-DOE
 Germantown MD 20874-1290

RE: Restart of FFTF

I am strongly in favor of restarting the Fast Flux Test Facility for production of isotopes for medical and industrial research. As one of a large percentage of Americans who has had a bone scan I realize how useful isotopes are in diagnosing ailments. I've been appalled to read of research that has been abandoned due to problems in obtaining lab quality isotopes.

Sincerely,



Connie Estep

1412-1**Response to Commentor No. 1412****1412-1:** DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1413: Keith G. Douka

03/16/00 THU 09:51 FAX 5093737806

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September 13, 2000

Department of Energy
Comments regarding restart of the FFTF

Keith C. Douka
2119 Shasta Ave.
Richland, WA 99352

I am in favor of re-starting the Fast Flux Test Facility.

It becomes tiring to continue to read article after article by concerned citizens regarding this issue, with little or no direct experience related to FFTF or the nuclear power industry as a whole.

My background includes the initial startup activities of the FFTF from 1976 to 1979. From there I supported nuclear startups and/or refueling outages for the following plants:

Tennessee Valley Authority	Sequoyah Unit 1 and 2 Watts Bar Unit 1 and 2
South Carolina Electric & Gas	V.C. Summer
Toledo Electric Co.	Davis-Besse
Florida Power Corp.	Crystal River III
Mississippi Power & Light	Grand Gulf
Georgia Power	Vogtle Unit 1 and 2
Commonwealth Edison	Braidwood Unit 1 and 2
Energy Northwest	Unit 2

The names for many of these utilities have changed over the years, in this case the listing reflects what was. It is important to spend some time qualifying an opinion.

FFTF in comparison to water-cooled power reactors for production of medical isotopes stands head and shoulders above in many areas. An important area to consider is "operating importance". Commercial power reactors in today's deregulated power market are focused on the bottom line, that is making power. Everything centers around the plant generating as much electricity as possible through the operating cycle. Medical isotopes should not take a back seat. The focus should be directly on the mission of creating the isotopes to save lives.

FFTF has a physical plant configuration that favors isotope production. It was designed for testing fuels and materials, whereas the typical power reactor was not. FFTF sits ready to handle the mission with sub-systems already in place to handle irradiated components. It's design includes the ability to load and unload test assemblies without core unloading. A power reactor has to de-couple the reactor head and remove it from the reactor vessel. Anytime you lift a 400,000 pound lid off of something it has to be considered at best "inconvenient".

FFTF has a high neutron environment. The liquid sodium coolant allows this where water is not as efficient. This again shows a broader spectrum of possibilities for isotope production.

Response to Commentor No. 1413

1413-1: DOE notes the commentor's support for Alternative 1, Restart FFTF, and opposition to Options 4, 5, and 6 of Alternative 2, Use Only Existing Operational Facilities. However, it should be noted that a CLWR would only be used in the production of plutonium-238 and not medical isotopes.

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.

1413-1

Commentor No. 1413: Keith G. Douka (Cont'd)

03/16/00 THU 09:51 FAX 5093737606

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FFTF operates at nearly atmospheric pressure. Power reactors operate at a typical 2,000 psi. The energies contained with the systems and piping are handled with a great amount of respect. You learn this when a steam line atmospheric relief valve lifts off.

The liquid sodium coolant is contained within piping systems that are located in cells with inert atmospheres. With welded pipe joints and low line pressure there is little chance of pipe rupture or unplanned leakage.

FFTF is a simpler operation with respect to a water-cooled nuclear power reactor. It's control room is very basic in comparison. It should though be upgraded with modern controls if for no other reason than spare parts availability.

FFTF is located on a government reservation in a solitary setting removed from all other site activities. Operation of this test facility would have no impact on cleanup activities at the rest of the site.

Hanford continues to accept contaminated waste. What little waste that is generated by FFTF would be placed right along side of the rest of the inbound contamination waste.

In summary: The United States of America is the world leader in many areas. It should also be the world leader in isotope production, not for the glory but to save American lives such as yours and mine. How ironic that we argue over the most inane things while each of us know someone battling cancer or that has died from cancer. It is also likely that I will face cancer in my future. If I am affected by cancer I certainly do not want opponents to FFTF to sit there and hold my hand telling me how sorry they are that I am dying, but my life as an American citizen was not worth the effort to operate the FFTF.



Keith G. Douka

1413-1
(Cont'd)

Response to Commentor No. 1413

Commentor No. 1442: Janelle Koester

From: Janelle Koester[SMTP:JANELLE@GORGE.NET]
Sent: Thursday, September 14, 2000 3:22:34 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: against startup at hanford
Auto forwarded by a Rule

I am writing to say that I am against the The U.S. Department of Energy's plan to restart the dangerous FFTF Nuclear Reactor at Hanford to produce research medical isotopes and plutonium_238.

I believe it is dangerous and unacceptable for many reasons, some of which I list here.

1. Future demands for medical isotopes can be met using other facilities.
2. Future needs for plutonium to power NASA space missions can be met using existing supplies, supplemented by foreign sources if necessary.
3. The cost analysis, non_proliferation study and waste management study, all extremely important to measuring the impact of FFTF restart, are separated from the environmental impact study.

Finally, more wastes and contamination are not acceptable at Hanford. Restart of FFTF will add more high_level waste to Hanford. Adding new wastes would interfere with the primary mission of Hanford: to clean it up.

Please note for your records that I am STRONGLY OPPOSED TO THIS PLAN AND STARTUP AT HANFORD, as both a citizen and multi_business owner in my community.

thanks,

Janelle Koester, Koester Consulting
PO Box 1175, Hood River,OR 97031
541.387.2844

Response to Commentor No. 1442

1442-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1442-2: Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of the remaining isotope production supports secondary missions, but cannot be effectively used due to the operating constraints associated with the facilities' primary missions (basic energy sciences or defense). DOE is currently meeting most of its short-term requirements. However, in the long-term (next 5 to 10 years) there will be a shortfall in available DOE capacity to meet demand. Should the isotope demand grow consistent with the Expert Panel Report, as it has recently, or if DOE's market share increases, there will be a need for expanded isotope production capacity in the short-term. The commentor is referred to the Chapter 2, Volume 1 discussion about facilities that were considered but dismissed.

1442-3: There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005.

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

1442-4: 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

Commentor No. 1442: Janelle Koester (Cont'd)

Response to Commentor No. 1442

Nonproliferation Impact Assessment in Appendixes P and Q, respectively in the Final NI PEIS.

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

1442-5: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing Hanford cleanup activities are high priority to DOE. Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

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

The draft "Waste Minimization and Management Plan for the Fast Flux Test Facility" (May 2000) was referenced in this NI PEIS and was available prior to the public hearings. The report is available on the FFTF website (www.fftf.org/reports).

Commentor No. 1442: Janelle Koester (Cont'd)

Response to Commentor No. 1442

1442-6: See response to Comment 1442-5.

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

Commentor No. 1443: Arlene Young

From: jyoung[SMTP:JYOUNG@EONI.COM]
 Sent: Thursday, September 14, 2000 3:39:10 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Hanford
 Auto forwarded by a Rule

I would like to reinforce former Senator Mark Hatfield's position that the Hanford facility should not be reactivated. Radioactive waste is a serious concern to everyone caring about our future. Those of us who live near this facility have watched carefully how slowly clean up of this site has progressed and the errors that have been made in handling this facility. There is no support for any other course of action than shutting the facility down completely and cleaning up the contamination on this site.

Arlene Young
 96 Penn Avenue
 La Grande, OR 97850
 541_963_3879

1443-1**1443-2****1443-1*****Response to Commentor No. 1443***

- 1443-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.
- 1443-2:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Commentor No. 1444: Ariel Simmons

From: Ariel Savannah Simmons[SMTP:SARIEL@USWEST.NET]
Sent: Thursday, September 14, 2000 11:05:06 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Nuclear infrastructure_PEIS c/o Colette Brow also mailed to Kempthorne, Craig, Crapo, Chenoweth, and Simpson
Auto forwarded by a Rule

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

I've recently learned that the Department of Energy is considering producing Plutonium 238 (PU_238) at INEEL for use in NASA space missions or involving INEEL in the production process, which will occur on the Hanford Reservation. To produce PU_238, the DOE will use a version of reprocessing technology, which will produce somewhere in the ballpark of 288,000 gallons of liquid waste. This is an exorbitant amount of nuclear waste and is neither acceptable nor justifiable.

As concerned citizen's, the members of the Snake River Alliance have asked you to extend the deadline for comments on the Draft Programmatic Environmental Impact Statement for Accomplishing Expanded Nuclear Energy Research and Development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility (FFTF). It takes time for people to grasp the ideas and implications in a complicated and multitudinous document, such as this Draft EIS. If possible, at this time, please extend the comment period another 30 days.

Please hear my concerns and prevent the production of PU_238 through "reprocessing" at INEEL and all other DOE sights like the Hanford Reservation.

Response to Commentor No. 1444

1444-1: The use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or INEEL. At INEEL, the tanks would not be used although certain facilities at the Idaho Nuclear Technology Engineering Center (INTEC) would be used to treat the wastes resulting from processing the irradiated targets. These are reliable systems that would process a maximum of 1,050 cubic meters of low-level radioactive waste over the 35-year nuclear infrastructure operational period. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. At Hanford, the existing high level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

1444-2: DOE notes the commentor's request for extension of the public comment period. The Council on Environmental Quality's (CEQ) "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR 1506.10(c)) require that a minimum of 45 days be allowed for public comment on the Draft NI PEIS. As stated in the Notice of Availability (65 FR 46443 et seq.), the public comment period began on July 28, 2000 and continued to September 18, 2000. In preparing the Final PEIS, DOE has assessed and considered both oral and written comments received on the Draft PEIS during the public comment period and has responded to these comments in the Final PEIS. Volume 3 of the NI PEIS contains public comments received on the NI PEIS and DOE responses to those comments. Moreover, late comments were considered to the extent practicable.

1444-3: The use of any of the proposed facilities would not impact the schedule, available funding, or progress of the cleanup missions at Hanford, INEEL, or ORR. This NI PEIS addressed wastes produced for each alternative, as well as cumulative impacts related to waste production. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

Commentor No. 1444: Ariel Simmons (Cont'd)

a.. Plutonium_238 production is entirely too risky of an endeavor. The reprocessing technology has led to the most expensive and complicated cleanup projects in the history of the United States ___ at INEEL, the Hanford Reservation in southeastern Washington, and Savannah River, South Carolina. The result of the extraction process is liquid waste that is both radioactive and hazardous. Difficult to manage and problematic to put into solid form, liquid waste poses an undue environmental risk.

1444-1

b.. As environmental groups continue to educate people with sound evidence about the waste types that DOE is generating with it's projects, people are becoming less tolerant of projects which serve no valid function, cost tremendous amounts of tax money in cleanup, and are designed solely to keep nuclear scientists in employment. I am an educated Idaho resident, and I have grave concerns about the production of plutonium_238 in my State.

1444-3

c.. "The Department's recent estimate on cleaning up our site is \$22 billion and is expected to take 50 years___ longer than any other DOE facility. In addition, we have over 360 individual superfund sites within the 890 sq. mile area that comprises INEEL. With this known, the last thing we need is a plan to generate more nuclear waste at a site that needs more waste like the DOE needs security scandals. Out of concern for Idaho's environment, I strongly urge you not to pursue the plutonium_238 production mission outlined in your PEIS." _Snake River Alliance concerns, which I share.

1444-4

d.. Though this form of plutonium is not usable in nuclear bombs; the technology used to create it is nearly identical to the technology used to extract plutonium_239, the weapons_usable isotope. In 1992, the Bush Administration officially halted reprocessing. This was done to demonstrate US willingness to staunch the flow of plutonium and to persuade other countries not to engage in this threatening technology. Why, then, would the DOE attempt to reopen this threat? Using this reprocessing technology to produce PU_238 will create a real proliferation threat.

1444-5

Response to Commentor No. 1444

1444-4: The commentor's position regarding plutonium-238 production at INEEL is noted. Production of plutonium-238 at one or more of the candidate sites would be conducted in support of NASA's deep space missions Volume 1, Section 1.2.2 of the NI PEIS). As discussed in Sections 4.3.2.1.13 and 4.4.2.1.13 of the EIS, selection of the Fluorinel Dissolution Processing Facility and/or the Advanced Test Reactor to support production of plutonium-238 would have no significant impact on the waste management system at INEEL. Use of any of the facilities proposed in this PEIS for the stated missions would not impact cleanup missions at DOE sites.

1444-5: The commentor is correct in stating that the technology that would be used to separate plutonium consisting of over 80 percent plutonium-238 and neptunium from the irradiated target is similar to the technology that was used to extract plutonium-239. However, the use of this technology is not in itself inconsistent with nonproliferation policy. Unlike plutonium-239, plutonium-238 is not used in nuclear weapons, but rather it would be used as a power source for NASA space missions. The technology that is discussed in EIS Sections S.3, 2.2.3 and A.1.4 would be used to chemically separate plutonium-238 and neptunium from irradiated targets and not from irradiated or spent nuclear fuel whereas the reprocessing we wish to discourage separates weapons grade plutonium-239 from irradiated nuclear fuel. As discussed in the separate nonproliferation impacts assessment report, use of this technology to produce plutonium-238 from irradiated targets will not create a nonproliferation threat, nor will it present any significant concerns related to meeting U.S. nonproliferation goals. This assessment does provide information on proliferation concerns which might be raised related to uncertainty regarding "reduction in attractiveness of material forms," one of the evaluation criteria used in the report. The potential for concerns to be raised are not violations of nonproliferation policy, but are useful to the overall process to reach a decision on the nuclear infrastructure. Further, this potential issue is unavoidable (unless the U.S. elects to neither produce nor purchase plutonium-238), since it impacts all PEIS alternatives and options, including the No Action Alternative and Alternative 5: permanently deactivate FFTF with no new missions at U.S. facilities. The supply of plutonium-238 is needed, and, in the event that its production is resumed in the U.S., the total separated stock of weapons useable neptunium currently in existence will be reduced over

Commentor No. 1444: Ariel Simmons (Cont'd)

e.. The PU_238 isotope is 280 times more radioactive than the stuff in nuclear warheads. Its use is too risky in NASA space missions. In the case of an accident upon liftoff or an "inadvertent re_entry", the possible risk to human life is too great.

f.. Plutonium isn't even necessary. It's not part of the propulsion system; the Pu_238 is used to power instrumentation on the spacecraft. The European Space Agency has developed solar power cells advanced enough that even a California Institute of Technology study by scientists under contract to NASA itself admit that solar power could get the job done. It is true that the deeper the space exploration, the less effective are the solar cells. But it is also true that the DOE refuses to invest in solar technologies because of it's love affair (and extreme lobbying pressure) from the nuclear industry.

g.. "The (INEEL Building 666, which is a "reprocessing" facility) is currently under consideration for new missions." This building is one of the most contaminated in America. Scrap it. The problems that will arise out of trying to reuse this building for new missions pose huge financial risks. Why put a lot of money into a sinking ship? The building should be decommissioned in a manner that protects, workers, the environment, and all of human health. Sacrifice the building, not human lives and the environment. As a member of the Snake River Alliance, please hear my concerns and requests below, "Considering all these factors that could adversely affect our environment and commitment to nonproliferation, I strongly urge you to select alternative 5 in the current PEIS. This alternative would allow the Advanced Test Reactor at INEEL to continue producing medical and industrial isotopes for the commercial sector and would not lead to the production of anymore highly radioactive liquid waste at Hanford or INEEL. The main mission at these two facilities has been and should continue to be cleanup of the mess left over from previous nuclear weapons work. Additional waste production would interfere with this already difficult and expensive work. Alternative 5 also calls for the decommissioning of the FFTF reactor at Hanford. FFTF is an aging breeder reactor whose use

1444-6

1444-7

1444-8

Response to Commentor No. 1444

time in an irreversible manner since there is a moratorium on U.S. spent fuel reprocessing. This reduction, which enhances nonproliferation efforts, is also an important factor for DOE to consider in reaching a decision on managing its nuclear facility infrastructure.

1444-6: DOE notes the commentor's concern for NASA's use of nuclear materials for space missions and interest in the development of alternative energy sources for 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.

1444-7: DOE would not conduct any reprocessing to produce weapons-grade plutonium under any of the alternatives considered under this programmatic environmental impact statement. The alternatives do include processing of target materials used to produce isotopes for medical and industrial uses, plutonium-238 for space missions, and nuclear materials research and development. Sections 4.3.1.1.13; 4.3.2.1.13; 4.3.3.1.13; and 4.4.3.1.13 were revised to clarify the waste management approach for waste resulting from processing of target materials for plutonium-238 production.

Building CPP-666 is divided into two parts, the Fuel Storage Facility and the Fluorine Dissolution Process Facility (FDPF). The FDPF is under consideration in this PEIS for storage of neptunium-237 oxide, preparation of neptunium-237 targets, and separation of plutonium-238 from irradiated targets. DOE believes that this facility will meet, with further analysis and/or minor modifications, the criteria to safely conduct these operations.

1444-8: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. It should be noted that medical isotopes would continue to be produced at ATR regardless of which alternative is selected in the Record of Decision. The FFTF would produce spent nuclear fuel and low-level radioactive waste, and as discussed throughout Section 4.3 of Volume 1, none of the proposed alternatives would add waste to the high-level waste tanks at Hanford or INEEL. Also, it should

Commentor No. 1444: Ariel Simmons (Cont'd)

would be inconsistent with United States policy to discourage use of this technology due to the capability this class of reactors has to produce more plutonium than is consumed. "

Thank you for the opportunity to comment on this plan.

Sincerely,

Ariel Simmons (Boise, Idaho)

**1444-8
(Cont'd)**

Response to Commentor No. 1444

be pointed out that while FFTF supported the breeder reactor program, it is not itself a breeder reactor, but rather a fast flux research reactor.

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 4.8.3.4 was revised to clarify that, while analysis shows that the waste management options considered in the NI PEIS would have only a small impact on the Hanford waste management infrastructure, if a decision were made to restart FFTF, DOE would seek an exemption under DOE Order 435.1 for the use of non-DOE facilities (i.e., commercial facilities) to treat and dispose of waste generated from FFTF. DOE would use this approach in order to provide additional assurance that the management of wastes resulting from the restart and operation of FFTF would not impact cleanup activities at the site. In either case, whether commercial or the Hanford waste management infrastructure is used, the waste would be managed in accordance with applicable Federal and state laws and regulations and appropriate DOE orders. 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.

With respect to cleanup of wastes at Hanford or INEEL, the proposed action and the existing cleanup missions are independent programs and actions related to one will not impact the other. While the cleanup activities at both Hanford and INEEL are high priority to DOE, it should be noted that the cleanup of legacy wastes is beyond the scope of the NI PEIS.

Commentor No. 1445: Rene T. Murry

From: Rene Murry[SMTP:RENETMURRY@EXCITE.COM]
Sent: Thursday, September 14, 2000 5:29:26 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford
Auto forwarded by a Rule

Dear Sir/Madame, I am very concerned about the government's plan to restarting a reactor at Hanford. This area does not need to deal with more nuclear waste. Please consider my voice as one against reactivating. Thank you.

Rene T. Murry, 322 N. 97th St. Seattle, WA 98013

1445-1

1445-2

Response to Commentor No. 1445

- 1445-1:** The restart of FFTF or any of the other proposed alternative facilities would not impact the schedule or available funding for existing cleanup activities. 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.
- 1445-2:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1446: Ruth Yarrow

From: Ruth Yarrow[SMTP:RUTHY@WPSR.ORG]
Sent: Thursday, September 14, 2000 6:00:50 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Oppose FFTF Restart
Auto forwarded by a Rule

I support Option 5 _ permanently deactivate FFTF with no new missions.

Thank you.

1446-1

Response to Commentor No. 1446

1446-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Commentor No. 1447: Tod McVicar

From: Tod McVicar[SMTP:TODMCVICAR@EARTHLINK.NET]
Sent: Thursday, September 14, 2000 7:11:57 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

This to let you know that I support the restart of FFTF for the production of Medical Isotopes. We need to have all of the science available to combat Medical problems, as more and more needs arise. We can not afford to be caught without any solutions for the future. I feel very strong about this production and encourage you to consider all possibilities and not just listen to the information in the EIS.

Thank You

___ Tod McVicar
___ todmccvicar@earthlink.net
___ EarthLink: It's your Internet.

1447-1

Response to Commentor No. 1447

1447-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1448: Chris Johnson

From: CLJohnson4@aol.com%internet
[SMTP:CLJOHNSON4@AOL.COM]
Sent: Thursday, September 14, 2000 8:25:52 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Start FFTF!
Auto forwarded by a Rule

This is such a vital project that I am taking a moment to write and let you know that we care! It is so important to start FFTF back up. The lives we could save by getting this research completed are just too important. We in the Tri_Cities area know the opposition is strong, but the good that could come out of this expense is worth it. Let's use this facility for good. Let's get it started back up as soon as we can.

Thank you,

Chris Johnson

1448-1**Response to Commentor No. 1448**

1448-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1449: Julie Dinwiddie

From: Julie[SMTP:LSTFRONTIER@HOTMAIL.COM]
 Sent: Thursday, September 14, 2000 8:28:08 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: INEEL
 Auto forwarded by a Rule

September 13, 2000
 Ms. Colette Brown
 DOE, Office of Space and Defense Power Systems

Dear Ms. Brown,
 Your Department's recent proposal to expand the civilian nuclear infrastructure, outlined in the Draft Programmatic Environmental Impact Statement for accomplishing expanded civilian nuclear energy research and development and isotope production mission in the United States, including the role of the Fast Flux Test Facility, raises significant nuclear weapons proliferation and environmental issues.

As a member of the Snake River Alliance I have become aware of the serious nuclear contamination and waste problems at INEEL. INEEL is one of the most contaminated areas in America. The Department's recent estimate on cleaning up our site is \$22 billion and is expected to take 50 years__longer than any other DOE facility. In addition, we have over 360 individual superfund sites within the 890 sq. mile area that comprises INEEL. With this known, the last thing we need is a plan to generate more nuclear waste at a site that needs more waste like the DOE needs security scandals. Out of concern for Idaho's environment, I strongly urge you not to pursue the plutonium_238 production mission outlined in your PEIS.

One of the most daunting problems confronting cleanup at major DOE facilities such as Hanford and INEEL, is the solidification of liquid high_level nuclear waste. Your current plan for plutonium_238 production entails the generation of approximately 288,000 additional gallons of this waste over the project's 35 year span. While this is a small portion of Hanford's high level waste, it is

1449-1

1449-2

Response to Commentor No. 1449

1449-1: The commentor's position regarding plutonium-238 production at INEEL is noted. Production of plutonium-238 at one or more of the candidate sites would be conducted in support of NASA's deep space missions Volume 1, Section 1.2.2 of the NI PEIS). As discussed in Sections 4.3.2.1.13 and 4.4.2.1.13 of the EIS, selection of the Fluorinel Dissolution Processing Facility and/or the Advanced Test Reactor to support production of plutonium-238 would have no significant impact on the waste management system at INEEL. Use of any of the facilities proposed in this PEIS for the stated missions would not impact cleanup missions at DOE sites.

1449-2: The use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or INEEL. At INEEL, the tanks would not be used although certain facilities at the Idaho Nuclear Technology Engineering Center (INTEC) would be used to treat the wastes resulting from processing the irradiated targets. These are reliable systems that would process a maximum of 1,050 cubic meters of low-level radioactive waste over the 35-year nuclear infrastructure operational period. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. At Hanford, the existing high level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

1449-3: 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

Commentor No. 1449: Julie Dinwiddie (Cont'd)

approximately one fifth of what we have remaining here in Idaho, which makes it a very significant amount. Previous leakage of this waste at INEEL and Hanford threatens our water supplies. What we certainly don't need is any more of this most highly problematic of waste forms.

Given the certain risks inherent in production of plutonium, the justified need for this material would have to be tremendous, and the PEIS does a poor job of providing ample justification. Beyond the risks involved in production, and the aforementioned resulting waste problem, there is also the issue of an accident occurring upon lift_off or reentry of a space probe carrying this material. The cassini probe, launched in 1997, carried 72 pounds of Pu_238. The potential for an explosion during lift_off or upon an inadvertent reentry during the fly_by phase, gave many in the scientific community pause, including scientists within NASA. According to NASA's own conservative estimate, a burn up upon reentry of the cassini probe could have caused 2,300 cancer fatalities, independent analyses ranged much higher. This potential for a catastrophic release of this extremely toxic material will remain so long as the US government remains committed to the use of plutonium_238. If DOE is to have a role in developing power systems for NASA's instrumentation, it should focus on promising solar technology, an alternative that has been promoted in the European scientific community.

There are also proliferation concerns as it pertains to this plan. A return to production of this isotope, however poorly justified, means a return to the use of aqueous reprocessing at DOE facilities where this technology has been used to extract bomb material for the weapons program. From President Carter to presidents Bush and Clinton, US policy has been to halt reprocessing in this country in order to set a global precedent to curtail the spread of nuclear weapons material_a noble effort in serious need of bolstering through action.

Indeed, an otherwise lukewarm Nuclear Infrastructure Nonproliferation Impact Assessment

1449-2
(Cont'd)

1449-3

1449-4

1449-5

Response to Commentor No. 1449

be exhausted by approximately 2005. Without an assured domestic supply of plutonium-238, DOE's ability to support future NASA space exploration missions may be lost.

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

Potential health and safety impacts associated with normal operations, facility accidents, and transportation as a result of the proposed production of plutonium-238 are relatively low and are discussed in detail in Chapter 4 of Volume 1, and Appendixes H, I, and J of Volume 2 in the Final NI PEIS.

- 1449-4:** DOE notes the commentor's concern for NASA's use of nuclear materials for space missions and interest in the development of alternative energy sources for 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. The Cassini fly-by occurred exactly as planned, with no release of nuclear material..
- 1449-5:** The commentor is correct in stating that the aqueous processing technology that would be used to separate plutonium consisting of over 80 percent plutonium-238 and neptunium from the irradiated target is similar to the technology that was used to extract plutonium-239. However, unlike plutonium-239, plutonium-238 is not used in nuclear weapons, but rather it would be used as a power source for NASA space missions. The technology that is discussed in EIS Sections S.3, 2.2.3 and A.1.4 would be used to chemically separate plutonium-238 and neptunium from irradiated targets and not from irradiated or spent nuclear fuel whereas reprocessing separates weapons grade plutonium-239 from irradiated nuclear fuel. As discussed in the separate nonproliferation impact assessment report, use of this technology to produce

Commentor No. 1449: Julie Dinwiddie (Cont'd)

conducted by your Office of Arms Control and Nonproliferation questions whether our commitment to nonproliferation isn't weakened by the use of the Fluorinel Dissolution Process Facility within Building 666 at INEEL. INEEL's reprocessing facility is next door to a wet storage unit for Navy spent fuel, which contains a greater than average amount of highly enriched uranium. It was reprocessed from 1953 to 1989 at INEEL for the weapons program. Use of this facility to carry out plutonium_238 extraction, especially considering the dubious need for this isotope, at the very least raises the concern that DOE is not fully committed to ending reprocessing. The international community cannot be expected to trust DOE's civilian_mission claim when an agency devoutly committed to development of weapons uses a nuclear weapons technology at a weapons facility.

**1449-5
(Cont'd)**

Considering all these factors that could adversely affect our environment and commitment to nonproliferation, I strongly urge you to select alternative 5 in the current PEIS. This alternative would allow the Advanced Test Reactor at INEEL to continue producing medical and industrial isotopes for the commercial sector and would not lead to the production of anymore highly radioactive liquid waste at Hanford or INEEL. The main mission at these two facilities has been and should continue to be cleanup of the mess left over from previous nuclear weapons work. Additional waste production would interfere with this already difficult and expensive work. Alternative 5 also calls for the decommissioning of the FFTF reactor at Hanford. FFTF is an aging breeder reactor whose use would be inconsistent with United States policy to discourage use of this technology due to the capability this class of reactors has to produce more plutonium than is consumed. Thank you for the opportunity to comment on this plan.

1449-6

Sincerely,

Julie Dinwiddie

Response to Commentor No. 1449

plutonium-238 from irradiated targets will not create a nonproliferation threat. DOE is committed to full compliance with and support of the U.S. policy prohibiting reprocessing. The juxtaposition of INEEL Building 666 to wet storage of highly enriched uranium Navy spent nuclear fuel and its previous mission of reprocessing spent nuclear fuel were considered in the separate nonproliferation impact assessment.

1449-6: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. It should be noted that medical isotopes would continue to be produced at ATR regardless of which alternative is selected in the Record of Decision. The FFTF would produce spent nuclear fuel and low-level radioactive waste, and as discussed throughout Section 4.3 of Volume 1, none of the proposed alternatives would add waste to the high-level waste tanks at Hanford or INEEL. Also, it should be pointed out that while FFTF supported the breeder reactor program, it is not itself a breeder reactor, but rather a fast flux research reactor.

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.

With respect to cleanup of wastes at Hanford or INEEL, the proposed action and the existing cleanup missions are independent programs and actions related to one will not impact the other. While the cleanup activities at both Hanford and INEEL are high priority to DOE, it should be noted that the cleanup of legacy wastes is beyond the scope of the NI PEIS.

Commentor No. 1450: Alvin Twitchell

From: AlvinTwitchell@cs.com%internet
[SMTP:ALVINTWITCHELL@CS.COM]
Sent: Thursday, September 14, 2000 10:01:47 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Restart FFTF
Auto forwarded by a Rule

I strongly support the restart of the Fast Flux Test Facility. I believe it can fulfill an important need for medical isotopes and be good for the Tri_Cities economy.

Alvin Twitchell

1450-1**Response to Commentor No. 1450**

1450-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1451: Sheila Del Signore

From: Sheila[SMTP:SDELSIGN@SUNVALLEY.NET]
 Sent: Thursday, September 14, 2000 10:18:58 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Plutonium proposal at the INEEL
 Auto forwarded by a Rule

September 15, 2000

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

Dear Ms. Brown,

Your Department's recent proposal to expand the civilian nuclear infrastructure, outlined in the Draft Programmatic Environmental Impact Statement for accomplishing expanded civilian nuclear energy research and development and isotope production mission in the United States, including the role of the Fast Flux Test Facility, raises significant nuclear weapons proliferation and environmental issues.

As a member of the Snake River Alliance I have become aware of the serious nuclear contamination and waste problems at INEEL. INEEL is one of the most contaminated areas in America. The Department's recent estimate on cleaning up our site is \$22 billion and is expected to take 50 years__longer than any other DOE facility. In addition, we have over 360 individual superfund sites within the 890 sq. mile area that comprises INEEL. With this known, the last thing we need is a plan to generate more nuclear waste at a site that needs more waste like the DOE needs security scandals. Out of concern for Idaho's environment, I strongly urge you not to pursue the plutonium_238 production mission outlined in your PEIS.

1451-1

Response to Commentor No. 1451

1451-1: The commentor's position regarding plutonium-238 production at INEEL is noted. Production of plutonium-238 at one or more of the candidate sites would be conducted in support of NASA's deep space missions Volume 1, Section 1.2.2 of the NI PEIS). As discussed in Sections 4.3.2.1.13 and 4.4.2.1.13 of the EIS, selection of the Fluorinel Dissolution Processing Facility and/or the Advanced Test Reactor to support production of plutonium-238 would have no significant impact on the waste management system at INEEL. Use of any of the facilities proposed in this PEIS for the stated missions would not impact cleanup missions at DOE sites.

Commentor No. 1451: Sheila Del Signore (Cont'd)

One of the most daunting problems confronting cleanup at major DOE facilities such as Hanford and INEEL, is the solidification of liquid high_level nuclear waste. Your current plan for plutonium_238 production entails the generation of approximately 288,000 additional gallons of this waste over the project's 35 year span. While this is a small portion of Hanford's high level waste, it is approximately one fifth of what we have remaining here in Idaho, which makes it a very significant amount. Previous leakage of this waste at INEEL and Hanford threatens our water supplies. What we certainly don't need is any more of this most highly problematic of waste forms.

I strongly urge you to select alternative 5 in the current PEIS. This alternative would allow the Advanced Test Reactor at INEEL to continue producing medical and industrial isotopes for the commercial sector and would not lead to the production of anymore highly radioactive liquid waste at Hanford or INEEL.

Thank you for the opportunity to comment on this plan.

Sincerely,

Sheila Del Signore

1451-2

1451-3

Response to Commentor No. 1451

1451-2: The use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or INEEL. At INEEL, the tanks would not be used although certain facilities at the Idaho Nuclear Technology Engineering Center (INTEC) would be used to treat the wastes resulting from processing the irradiated targets. These are reliable systems that would process a maximum of 1,050 cubic meters of low-level radioactive waste over the 35-year nuclear infrastructure operational period. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. At Hanford, the existing high level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

1451-3: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. It should be noted that medical isotopes would continue to be produced at ATR regardless of which alternative is selected in the Record of Decision. The FFTF would produce spent nuclear fuel and low-level radioactive waste, and as discussed throughout Section 4.3 of Volume 1, none of the proposed alternatives would add waste to the high-level waste tanks at Hanford or INEEL.

With respect to cleanup of wastes at Hanford or INEEL, the proposed action and the existing cleanup missions are independent programs and actions related to one will not impact the other. While the cleanup activities at both Hanford and INEEL are high priority to DOE, it should be noted that the cleanup of legacy wastes is beyond the scope of the NI PEIS.

Commentor No. 1452: Esther Powell

From: EMuirPowell@aol.com%internet
[SMTP:EMUIRPOWELL@AOL.COM]
Sent: Thursday, September 14, 2000 10:24:19 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

I am writing to let you know that I believe DOE should keep FFTF as an active facility for medical isotope production. This mission is vital to the millions of people who need effective treatments for cancer. In addition, shutting down FFTF just because of a few screaming environmental groups who don't even live here in the Tri_Cities would be a huge waste of the tax dollars that have were spent to build the facility in the first place. Thank you.

Esther Powell
1616 Hains
Richland, WA 99352

1452-1

1452-2

Response to Commentor No. 1452

- 1452-1:** DOE notes the commentor's support for Alternative 1, Restart FFTF.
- 1452-2:** DOE notes the commentor's opinion. 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.

Commentor No. 1453: Florence Lemle

From: FLemle@aol.com%internet[SMTP:FLEMLE@AOL.COM]
 Sent: Thursday, September 14, 2000 11:32:48 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Re: produce potatoes not plutonium
 Auto forwarded by a Rule

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

Dear Ms. Brown:
 Your Department's recent proposal to expand the civilian nuclear infrastructure, outlined in the Draft Programmatic Environmental Impact Statement for accomplishing expanded civilian nuclear energy research and development and isotope production mission in the United States, including the role of the Fast Flux Test Facility, raises significant nuclear weapons proliferation and environmental issues.

As a member of the Snake River Alliance I have become aware of the serious nuclear contamination and waste problems at INEEL. INEEL is one of the most contaminated areas in America. The Department's recent estimate on cleaning up our site is \$22 billion and is expected to take 50 years__longer than any other DOE facility. In addition, we have over 360 individual superfund sites within the 890 sq. mile area that comprises INEEL. With this known, the last thing we need is a plan to generate more nuclear waste at a site that needs more waste like the DOE needs security scandals. Out of concern for Idaho's environment, I strongly urge you not to pursue the plutonium_238 production mission outlined in your PEIS.

One of the most daunting problems confronting cleanup at major DOE facilities such as Hanford and INEEL, is the solidification of liquid high_level nuclear waste. Your current plan for plutonium_238 production entails the generation of approximately 288,000 additional gallons of this waste over the project's 35 year span. While this is a small portion of Hanford's high level waste, it

1453-1

1453-2

Response to Commentor No. 1453

- 1453-1:** The commentor's position regarding plutonium-238 production at INEEL is noted. Production of plutonium-238 at one or more of the candidate sites would be conducted in support of NASA's deep space missions Volume 1, Section 1.2.2 of the NI PEIS). As discussed in Sections 4.3.2.1.13 and 4.4.2.1.13 of the EIS, selection of the Fluorinel Dissolution Processing Facility and/or the Advanced Test Reactor to support production of plutonium-238 would have no significant impact on the waste management system at INEEL. Use of any of the facilities proposed in this PEIS for the stated missions would not impact cleanup missions at DOE sites.
- 1453-2:** 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 INEEL. At INEEL, the tanks would not be used although certain facilities at the Idaho Nuclear Technology Engineering Center (INTEC) would be used to treat the wastes resulting from processing the irradiated targets. These are reliable systems that would process a maximum of 1,050 cubic meters of low-level radioactive waste over the 35-year nuclear infrastructure operational period. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. At Hanford, the existing high level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.
- 1453-3:** 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

Commentor No. 1453: Florence Lemle (Cont'd)

is approximately one_fifth of what we have remaining here in Idaho, which makes it a very significant amount. Previous leakage of this waste at INEEL and Hanford threatens our water supplies. What we certainly don't need is any more of this most highly problematic of waste forms.

Given the certain risks inherent in production of plutonium, the justified need for this material would have to be tremendous, and the PEIS does a poor job of providing ample justification. Beyond the risks involved in production, and the aforementioned resulting waste problem, there is also the issue of an accident occurring upon liftoff or reentry of a space probe carrying this material. The cassini probe, launched in 1997, carried 72 pounds of Pu_238. The potential for an explosion during liftoff or upon an inadvertent reentry during the fly_by phase, gave many in the scientific community pause, including scientists within NASA. According to NASA's own conservative estimate, a burn up upon reentry of the cassini probe could have caused 2,300 cancer fatalities, independent analyses ranged much higher. This potential for a catastrophic release of this extremely toxic material will remain so long as the US government remains committed to the use of plutonium_238. If DOE is to have a role in developing power systems for NASA's instrumentation, it should focus on promising solar technology, an alternative that has been promoted in the European scientific community.

There are also proliferation concerns as it pertains to this plan. A return to production of this isotope, however poorly justified, means a return to the use of aqueous reprocessing at DOE facilities where this technology has been used to extract bomb material for the weapons program. From President Carter to presidents Bush and Clinton, US policy has been to halt reprocessing in this country in order to set a global precedent to curtail the spread of nuclear weapons material_a noble effort in serious need of bolstering through action.

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1453-5

Response to Commentor No. 1453

be exhausted by approximately 2005. Without an assured domestic supply of plutonium-238, DOE's ability to support future NASA space exploration missions may be lost.

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

Potential health and safety impacts associated with normal operations, facility accidents, and transportation as a result of the proposed production of plutonium-238 are relatively low and are discussed in detail in Chapter 4 of Volume 1, and Appendixes H, I, and J of Volume 2 in the Final NI PEIS.

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1453-5: The commentor is correct in stating that the aqueous processing technology that would be used to separate plutonium consisting of over 80 percent plutonium-238 and neptunium from the irradiated target is similar to the technology that was used to extract plutonium-239. However, unlike plutonium-239, plutonium-238 is not used in nuclear weapons, but rather it would be used as a power source for NASA space missions. The technology that is discussed in EIS Sections S.3, 2.2.3 and A.1.4 would be used to chemically separate plutonium-238 and neptunium from irradiated targets and not from irradiated or spent nuclear fuel whereas reprocessing separates weapons grade plutonium-239 from irradiated nuclear fuel. As discussed in the separate nonproliferation impact assessment report, use of this technology to produce

Commentor No. 1453: Florence Lemle (Cont'd)

Indeed, an otherwise lukewarm Nuclear Infrastructure Nonproliferation Impact Assessment conducted by your Office of Arms Control and Nonproliferation questions whether our commitment to nonproliferation isn't weakened by the use of the Fluorinel Dissolution Process Facility within Building 666 at INEEL. INEEL's reprocessing facility is next door to a wet storage unit for Navy spent fuel, which contains a greater than average amount of highly enriched uranium. It was reprocessed from 1953 to 1989 at INEEL for the weapons program. Use of this facility to carry out plutonium_238 extraction, especially considering the dubious need for this isotope, at the very least raises the concern that DOE is not fully committed to ending reprocessing. The international community cannot be expected to trust DOE's civilian_mission claim when an agency devoutly committed to development of weapons uses a nuclear weapons technology at a weapons facility.

Considering all these factors that could adversely affect our environment and commitment to nonproliferation, I strongly urge you to select alternative 5 in the current PEIS. This alternative would allow the Advanced Test Reactor at INEEL to continue producing medical and industrial isotopes for the commercial sector and would not lead to the production of anymore highly radioactive liquid waste at Hanford or INEEL. The main mission at these two facilities has been and should continue to be cleanup of the mess left over from previous nuclear weapons work. Additional waste production would interfere with this already difficult and expensive work. Alternative 5 also calls for the decommissioning of the FFTF reactor at Hanford. FFTF is an aging breeder reactor whose use would be inconsistent with United States policy to discourage use of this technology due to the capability this class of reactors has to produce more plutonium than is consumed. Thank you for the opportunity to comment on this plan.

Sincerely,

Florence Lemle
PO Box 3575
Jackson, WY 83001
Flemle@aol.com

1453-5
(Cont'd)

1453-6

Response to Commentor No. 1453

plutonium-238 from irradiated targets will not create a nonproliferation threat. DOE is committed to full compliance with and support of the U.S. policy prohibiting reprocessing. The juxtaposition of INEEL Building 666 to wet storage of highly enriched uranium Navy spent nuclear fuel and its previous mission of reprocessing spent nuclear fuel were considered in the separate nonproliferation impact assessment.

1453-6: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. It should be noted that medical isotopes would continue to be produced at ATR regardless of which alternative is selected in the Record of Decision. The FFTF would produce spent nuclear fuel and low-level radioactive waste, and as discussed throughout Section 4.3 of Volume 1, none of the proposed alternatives would add waste to the high-level waste tanks at Hanford or INEEL. Also, it should be pointed out that while FFTF supported the breeder reactor program, it is not itself a breeder reactor, but rather a fast flux research reactor.

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.

With respect to cleanup of wastes at Hanford or INEEL, the proposed action and the existing cleanup missions are independent programs and actions related to one will not impact the other. While the cleanup activities at both Hanford and INEEL are high priority to DOE, it should be noted that the cleanup of legacy wastes is beyond the scope of the NI PEIS.

Commentor No. 1454: James R. McGrath

From: james mcgrath
[SMTP:JIMMCGRATH@EARTHLINK.NET]
Sent: Thursday, September 14, 2000 11:19:44 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

We want to add our voices to those opposing the restart of the Fast Flux Test Facility at Hanford, WA. To begin the production now of radioactive isotopes which competent nuclear medicine leaders have said is not needed and to begin again producing a stream of radioactive waste in the midst of a cesspool of radioactivity which the D.O.E. agreed 11 years ago to clean up and has failed it's part is almost unbelievable.

If we (as a nation) would set put our energies and resources into a genuine and full fledged cleanup action, it would provide a new economic base for the stessed tri_cities area and turn people in a direction they can feel good about. Nobody can be proud to be part of an activity which is unnecessary and destructive.

Let's shut down the FFTF permanently.

James R. McGrath, MD Charlotte B. McGrath, RN
10901 176th Circle NE #1712
Redmond, WA (*052_7248 425_881_2220

1454-1

1454-2

1454-3

1454-4

Response to Commentor No. 1454

1454-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and support for Alternative 5, Permanently Deactivate FFTF.

1454-2: 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 advise regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings. Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

The NI PEIS provides an estimate of waste generation and potential human health impacts associated with each of the alternatives proposed for the production of medical isotopes. Any additional wastes generated in support of this mission would be managed in a safe an environmentally protective manner and in compliance with all applicable Federal and state laws, regulations, and applicable DOE orders. In terms of potential human health impacts, the NI PEIS analysis indicates that the most likely impacts would not result in additional cancer fatalities among the population surrounding the DOE facilities that may be selected for use.

Commentor No. 1454: James R. McGrath (Cont'd)

Response to Commentor No. 1454

In addition, the proposed action would not have an impact on the cleanup missions at any of the candidate sites.

1454-3: DOE notes the commentor's concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.

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.

1454-4: See response to comment 1454-1.

Commentor No. 1455: George N. Ruge

From: GNRuge@aol.com%internet
[SMTP:GNRUGE@AOL.COM]
Sent: Friday, September 15, 2000 1:25:29 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: PEIS
Auto forwarded by a Rule

I support the restart of the FFTF Reactor Facility at Hanford to meet the national needs for medical isotopes and other peaceful nuclear materials. The FFTF is the most economical, safe, and environmental friendly method available to meet these needs.

Thanx!
George N. Ruge
509_387_0675

1455-1

Response to Commentor No. 1455

1455-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1456: John F. Covey

From: JCovey50@aol.com%internet
 [SMTP:JCOVEY50@AOL.COM]
 Sent: Thursday, September 14, 2000 11:36:15 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Draft Programmatic Environmental Impact Statement
 (PEIS)
 Auto forwarded by a Rule

To whom it may concern,

I am writing concerning the Draft Programmatic Environmental Impact Statement (PEIS) for supporting civilian nuclear energy research and development and isotope production missions in the United States, including the role of the Fast Flux Test Facility. I attended the meeting in Richland, Wa concerning this Statement. I think that FFTF should be used for the medical isotope production. I come from a family that has seen cancer numerous times on both sides. I have a sister who has had skin cancer. Therefore, I am looking at a good possibility of getting cancer. We need the research and development done now, with a restart of FFTF this could happen. FFTF could be on line and producing isotopes while the other options are still being engineered and attempting to go through their approval processes. I have read and listened to the opposition for FFTF and I see only scare tactics being used to attempt to sway public opinion.

John F Covey
 2163 Clearview Ave.
 Richland, Wa 99352

1456-1

1456-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

1456-2

1456-2: DOE notes the commentor's views.

Commentor No. 1457: Carol Halvorson

From: Halvocar@aol.com%internet
[SMTP:HALVOCAR@AOL.COM]
Sent: Friday, September 15, 2000 3:05:23 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: No to Hanford Restart of the FFTF
Auto forwarded by a Rule

I cannot believe that any sane person would consider restarting the FFTF Nuclear Reactor at Hanford. We already are having trouble dealing with the radioactive wastes that were created in the past, and we're considering a decision that would create MORE waste? This is insanity. Let's clean up or attempt to clean up the mess that has already been created.

Your own people are telling you that the medical isotopes and the Plutonium is not necessary. Listen to them. Listen to the voices of reason and not to those who would send money your way. They care not for your lives and ours.

Do not restart the FFTF at Hanford.
Carol Halvorson
HS Teacher in Portland

1457-1

1457-2

1457-3

1457-4

Response to Commentor No. 1457

1457-1: The restart of FFTF or any of the other proposed alternative facilities would not impact the schedule or available funding for existing cleanup activities at Hanford, INEEL, or ORR. The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed action for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.

1457-2: DOE notes the commentor's concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.

1457-3: DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use

Commentor No. 1457: Carol Halvorson (Cont'd)

Response to Commentor No. 1457

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.

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. Although research to identify other potential fuel sources to support these space exploration missions has been conducted, no viable alternative to using plutonium-238 has been established. 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.

1457-4: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1458: Russell D. Hoffman

From: Russell D. Hoffman
[SMTP:RHOFFMAN@ANIMATEDSOFTWARE.COM]
Sent: Friday, September 15, 2000 7:36:49 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Cc: president@whitehouse.gov%internet; Post Cassini Flyby News
Subject: Re: Time Extension __ Monday, September 18 __ Help
Stop Plutonium Development for Space __ October 7 Action List
Auto forwarded by a Rule

To: Colette E. Brown,
U.S. Department of Energy, NE_50,
19901 Germantown Road, Germantown, MD 20874_1290
Nuclear.Infrastructure_PEIS@hq.doe.gov

From: Russell D. Hoffman
P.O. Box 1936
Carlsbad California USA 92018
rhoffman@animatedsoftware.com
September 14th, 2000

Dear Ms Brown,

I would like to submit the following electronic newsletter I received today as a supplement to my prior letter of September 9th, 2000. Also, I would appreciate being informed of what sort of response I can expect from DoE on the matters I raised in my previous email.

The enclosed newsletter is from the "NOFLYBY" webmaster, Jonathan Haber. It suggests that all readers send their comments not only to DoE but to __ not Jonathan Haber __ but Bruce Gagnon, that is, Global Net.

In my previous email I referred to Global Net __ that is, Bruce Gagnon's group __ as the "The official organization which opposes nuclear power in space". By "official" I did not mean to imply that there was a publicly documented sanctioning (there may be, for all I know), but rather that NASA, DOE, and other government agencies,

Response to Commentor No. 1458

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- 1458-1** **1458-1:** DOE notes the commentor's concern for NASA's use of nuclear materials for space missions and concern over nuclear waste. 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 (see Volume 1, Section 1.2 of the NI PEIS).

Commentor No. 1458: Russell D. Hoffman (Cont'd)

and the media, and other activist groups, have all behaved *as if* that group were somehow officially sanctioned. NASA for example a few years ago held a "town meeting" about Cassini with Gagnon's group, and at that meeting Gagnon specifically excluded local (Florida) NASA sub_contractor scientist Horst Poehler from participating at a panel level. Gagnon had no comparable expert available. (Dr. Poehler is the author of the excellent Cassini Cancers article, available at my STOP CASSINI web site.)

I submit the attached newsletter as an indication that Gagnon's group is indeed considered, even by many people in the movement itself, as the "de facto" leadership organization in opposition to DOE plans.

But I also claim that Bruce Gagnon, and several others associated with his group, are both secretive, and extraordinarily unproductive, specifically because they are frauds. Such behavior is utterly UNConstitutional against a U.S. citizen, yet these "operatives" are agents of American military policy acting against American citizens (among others). At the same time, they are acting as if in utter ignorance of numerous scientific principals.

Such activities have got to stop for our democracy to solve its problems, such as the continued hazard from the growing nuclear waste piles all around our country (nearly all DOE's fault), and the growing pile of official lies being told in order to support a bankrupt national nuclear policy and its corrupt and blindfolded industry __ an industry which does not even dare to examine its own dangers.

It is very likely that if the American public understood the true dangers we are facing from the various nuclear threats our own government makes against us __ which are all cumulative in their effects on the biosphere and on our health __ we, the public, would have stopped this mad behavior long ago.

So one must ask, why haven't we?

Indeed, why have a few closed_minded scientists at NASA actually managed to convince the world to let a particularly large and

**1458-1
(Cont'd)**

Response to Commentor No. 1458

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.

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 (see Section N.3.2).

DOE does not place operatives in environmental organizations, the news media, NASA, or any other organization. Individuals and organizations are free to make any comment on the NI PEIS. Responses to all comments received during the comment period are given in the Comment Response Document that comprises Volume 3 of this NI PEIS.

Commentor No. 1458: Russell D. Hoffman (Cont'd)

cumbersome probe be sent to Saturn, thus risking spilling 400,000 Curies of Plutonium 238 in vaporized form into our small biosphere with 6 billion human souls on board?

Why couldn't NASA have flown two non_nuclear missions to replace Cassini's ugly and dangerous nuclear solution ___ dangerous, as proven by NASA's own subsequent failures? (Titan's have failed, orbital insertions have failed, the Shuttles have been grounded for potentially catastrophic failures found by chance, etc. etc. etc.)

Why did NASA not only risk our (citizens of planet Earth's) lives, and do so for no scientific gain at all since the entire science gain could have been developed with non_nuclear electrical power sources, but why also did NASA risk its own reputation by attempting such a dangerous and foolhardy thing?

The answer is surely the military connection I discussed in my previous letter.

The fact is, I doubt the American public, if given a fair chance to look at the issues, would go along with such madness as is currently being proposed by DOE. The only explanation I can accept for my fellow Americans making such wrong decisions collectively is that they have not been given the facts.

When I became involved, in 1997, with the issue of nukes in space, it quickly became apparent that, except for the dedicated work of one investigative journalist (Karl Grossman), nukes in space was largely a forgotten issue ___ a slumbering horror which needed to be stopped.

Soon, even more appeared to be amiss than just silence from the major media and from other environmental organizations (the issue won a Project Censored award about that time).

Eventually, with careful study, I was able to identify the problem of why the public didn't understand how little we (the public) were gaining from such great dangers DOE was permitting: The real

**1458-1
(Cont'd)**

Response to Commentor No. 1458

Commentor No. 1458: Russell D. Hoffman (Cont'd)

problem?

Government is playing both sides of the issue.

I believe that our government is able to control, through carefully placed operatives both in environmental organizations and in the media __ not only everything NASA officially says to the media about what is going on, and many media outlets themselves __ but in addition, through agents and infiltrators of the various movements opposed to what the Government is doing, they control even what the media hears the opposition say.

These infiltrators are particularly potent, because they cause the wrong questions to be asked, or if anyone does ask the right questions, they are willing to accept the wrong answers. These infiltrators fight only half_heartedly, except at their efforts to gain control of all phases of the movement. They commit 100s of other sins of both omission and commission to prevent other activists from becoming effective in actually changing public policy by effecting public opinion.

I would like to submit as additional suggested reading, all 253 prior issues of the Stop Cassini newsletter, and all three prior issues of the Nukes, Kooks and Spooks newsletter, all of which are available either online at my web site (for the Stop Cassini newsletters) or by request directly from me (for the Nukes, Kooks and Spooks newsletters, which I have not yet been posted).

And I again request to be informed when I can expect detailed, honest answers to my charges. The American public has a right to know the full truth. This country was founded on truth and the purpose of the Environmental Impact Statement process is to present the truth fairly and completely so that the American public can decide for themselves what they want to do.

Sincerely,

Russell D. Hoffman
Concerned Citizen, Activist, Carlsbad, California
Attachment: Email received 9/14/00 from NOFLYBY (followed by my standard contact information to close the email)

1458-1
(Cont'd)

Response to Commentor No. 1458

Commentor No. 1459: Elizabeth N. Presley

From: Betsy Presley[SMTP:BEEP@TELISPHERE.COM]
Sent: Wednesday, September 13, 2000 1:24:12 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford
Auto forwarded by a Rule

Please add my name to those vigorously opposing the start_up of the FFTF in Hanford. My reasons remain the same as those you hear from thousands of informed citizens in this state: the current amount of waste must be cleaned up; no new waste should be added; the facility is not needed for medical reasons; the environmental impact on all life is endangered by such a project. The alternative? Shut the facility down forever.

Elizabeth N. Presley, Federal Way WA

- || 1459-1
- || 1459-2
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- || 1459-4
- || 1459-5
- || 1459-6

Response to Commentor No. 1459

- 1459-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and support for Alternative 5, Permanently Deactivate FFTF.
- 1459-2:** DOE notes the commentor's concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.
- 1459-3:** 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.
- 1459-4:** 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.

Commentor No. 1459: Elizabeth N. Presley (Cont'd)

Response to Commentor No. 1459

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.

For nearly 50 years, DOE has actively promoted the use of radioisotopes to improve the health and well-being of U.S. citizens. DOE's use of its unique technologies and capabilities to develop isotopes for civilian purposes has enabled the widespread application of medical isotopes seen today. While its market share is a small fraction of total world isotope production, DOE remains the key provider for a large number of isotopes 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. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the U.S. to meet future demand, and to encourage the commercial sector to privatize the production of isotopes that have established applications to a level that would support commercial ventures.

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

1459-5: The concerns expressed on the potential health and environmental effects of NI PEIS Alternative 1 are noted. The environmental impacts associated with operation of the FFTF and support facilities at Hanford during normal operations and from postulated accidents are presented and discussed in Section 4.3 of the NI PEIS. All impacts to human health and to ecological resources would be small in the immediate area of the Hanford site and negligible at all distant locations.

1459-6: See response to comment 1459-1.

Commentor No. 1460: J. H. Browne, Jr.

From: jb4juddcreek@webtv.net%internet
[SMTP:JB4JUDDCREEK@WEBTV.NET]
Sent: Wednesday, September 13, 2000 3:24:37 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Possible restart of the FFTF facility at Hanford (Richland, Wa) Auto forwarded by a Rule

With regard to the chairman f NERAC's statement to the Energy Secretary that "There is an urgent sense that the nation must rapidly restore an adequate investment in basic & applied research in nuclear energy if it is to sustain a viable United States capability in the 21st Century"_ I'd be interested in the actual Location of that 'urgent sense.' The representation (in the NI PEIS "Summary") that NERAC provides "independent expert advice' on such matters is not a true representation; many of the 'experts' have something to gain by increased funding of 'basic & applied research in nuclear energy, which calls into question their alleged 'independent' status. Additionally, a lack of _true_ independence calls into question their determination of the parameters of "viable U.S. capability" in the future. Despite the thrust of the NI PEIS, ie that this is a process that is designed to put U.S. assets to work (& a small subset of U.S. assets located at/ near USDOE facilities, at that), & that this justifies ignoring foreign sources of supply of some products from these assets, this policy ignores that we have Partners in many of our present ventures into space exploration. To ignore their potential contributions (& cost_ effective ones, most likely) of Pu_238 is to support a 'demand' economy_ something we (ie our Nation) determined was 'The Problem' with industrial policies in the former Soviet Union, & other places as well. While I appreciate that deactivation of the FFTF facility will increase cleanup costs at Hanford in the near future, it will ultimately have to be done. I'd say, as long as our Gov't is supporting more internationally regulated global trade, it would be the height of hypocrisy to deny that, in this particular area, we must ignore our own policies in order to support a 'mission' for this facility. (While I may have qualms, personally, about support of global 'free' trade, NAFTA is presently 'the law of the land.')

1460-1

1460-2

1460-3

1460-4

Response to Commentor No. 1460

- 1460-1:** Clean, safe, reliable nuclear power has a role today and in the future for our national energy security. In recognition of this need, nuclear energy research and development programs have been initiated to address potential long-term barriers to expanded use of nuclear power (e.g., nuclear waste, proliferation, safety, and economics) and to ensure that current nuclear power plants can continue to deliver adequate and affordable energy supplies. An enhanced DOE nuclear facility infrastructure is required to support such nuclear energy research and development for civilian applications. Information on the need for nuclear energy research and development is provided in Section 1.2.3 of Volume 1.
- 1460-2:** The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements. Section 1.2.1 of Volume 1 has been revised to clarify DOE's isotope production role and other producers' capabilities to fulfill U.S. isotope needs.
- DOE could purchase plutonium-238 from Russia; however, for supply reliability reasons and concern of nuclear nonproliferation, DOE's preference is to establish a domestic plutonium-238 production capability. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.
- 1460-3:** Deactivation of FFTF would be a Hanford cleanup cost.
- 1460-4:** 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. Further, supplies of many research isotopes are not readily available from existing foreign or domestic sources, causing a number of medical research programs to be terminated, deferred, or seriously delayed. As such, reliance on these other sources

Commentor No. 1460: J. H. Browne, Jr. (Cont'd)

I support Alternative 5, but consider that Alt 4 might be my first choice, had it been structured differently. Thanks for your consideration.

(206) 463_9641

JHBrowne, Jr.
Vashon Island, Wa

1460-5**Response to Commentor No. 1460**

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.

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

1460-5: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. DOE also notes that the commentor would have supported Alternative 4, Construct New Research Reactor, if it had been structured differently.

Commentor No. 1461: Dennis Crockett

From: Dennis Crockett[SMTP:CROCKEDC@WHITMAN.EDU]
Sent: Wednesday, September 13, 2000 3:36:21 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford FFTF
Auto forwarded by a Rule

I am writing to express my desire that Hanford's FFTF be permanently shut down and deactivated. It is an irresponsible affront to the health and welfare of the citizens of eastern Washington to add more radioactive wastestreams to the nation's most polluted nuclear site. The Washington State Medical Association, Washington Academy of Family Physicians and the Physicians for Social Responsibility have all passed formal resolutions opposing the restart of Hanford's FFTF. Clean up and not restart, as outlined in the TPA, should be the future mission at Hanford.

Sincerely,

Dennis Crockett, Ph.D.
1221 Alvarado Terrace
Walla Walla, WA 99362

1461-1

1461-2

1461-3

1461-4

Response to Commentor No. 1461

- 1461-1:** DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, and opposition to Alternative 1, Restart FFTF.
- 1461-2:** 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.
- Each alternative of the NI PEIS considered and evaluated potential health effects, both in terms of consequences and risks, associated with normal operations and accidental releases from a complete spectrum of accidents including severe accidents. All of the alternatives, including the restart of FFTF, are shown to pose very little risk to the health and safety of the public.
- 1461-3:** See response to comment 1461-1.
- 1461-4:** See response to comment 1461-2.

Commentor No. 1462: Shayne R. Bono

From: MsFans@aol.com%internet[SMTP:MSFANS@AOL.COM]
 Sent: Wednesday, September 13, 2000 5:05:28 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: RESTART FOR LIFE
 Auto forwarded by a Rule

To Whom It May Concern:

I strongly urge the DOE to restart FFTF and use this modern and safe reactor to make the life saving isotopes that the cancer patients of this country so desperately need!!! I am not only a cancer survivor, but also the wife of an employee at this precious facility. Please help my husband and all of the FFTF employees, to help cancer patients such as myself be able to fight this unfair killer with more authority. Let's not confuse the issue of postwar cleanup in our area with the mission of the FFTF. FFTF is a safe and efficient reactor, which can produce a very wide variety of medical isotopes with very little waste as a result. Please ignore radical environmental groups' opinions, for they speak only out of ignorance and misplaced passion. They are not a part of this community, and can only benefit from the production of the isotopes at FFTF. Please do America and all of us in Eastern Washington a favor and RESTART FFTF to embark on these new and exciting missions. Let us all make the Tri_Cities and Hanford a place to be proud of. Let's start saving lives!!!!

Sincerely,

Shayne R. Bono

1462-1

1462-2

1462-1

Response to Commentor No. 1462

1462-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

1462-2: 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.

Commentor No. 1463: Doris Cellarius

From: Doris Cellarius[SMTP:DORIS@CELLARIUS.NET]
 Sent: Wednesday, September 13, 2000 5:25:08 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: DO NOT RESTART THE FFTF
 Auto forwarded by a Rule

To: Colette E. Brown
 US Department of Energy, NE_50
 19901 Germantown Road
 Germantown, MD 20874_1290

From: Doris Cellarius
 621 Park Avenue, Prescott, AZ 86303_4044

I lived in Washington State for 27 years (until last September) and was very concerned about Hanford Clean_up. I served for several years on the DOIT Mixed Waste Advisory Committee. I oppose the proposed restart of FFTF Nuclear Reactor at Hanford to produce research medical isotopes and plutonium_238.

Restart of that reactor would add more high_level waste to the cleanup problem, further complicating an already unacceptable cleanup effort by the Department of Energy.

Furthermore, the DOE has never been able to document why such a restart is needed. Many medical professionals have testified that demands for medical isotopes can be met using other facilities. Plutonium to power NASA space missions can be met using existing supplies, supplemented by foreign sources if necessary.

I am disgusted with the way the Department of Energy has attempted to manipulate politicians and the public in Washington state. Playing on the public's fears is not an honorable practice for a government agency established to serve the public good. Please give up on this faulty proposal.

Thank you.

Doris Cellarius

Response to Commentor No. 1463

1463-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1463-2: The restart of FFTF would not impact the schedule or available funding for existing cleanup activities at Hanford nor would it generate any high-level radioactive wastes. 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 use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at Hanford. The higher-activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. Therefore, the existing Hanford high-level radioactive waste facilities would not be used and, as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

1463-3: The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements.

Although other manufacturers produce medical isotopes, DOE remains the key provider for a large number of isotopes 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. Currently, approximately 50 percent of DOE's isotope production capability is being used. Much of

1463-1

1463-2

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1463-5

Commentor No. 1463: Doris Cellarius (Cont'd)

Response to Commentor No. 1463

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

- 1463-4:** There are approximately 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Although research to identify other potential fuel sources to support these space exploration missions has been conducted, no viable alternative to using plutonium-238 has been established. 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.

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

- 1463-5:** DOE notes the commentor's views. DOE is committed to discharging its responsibilities in an open and unbiased manner and providing the public with comprehensive environmental reviews of its proposed actions. In compliance with NEPA and CEQ regulations, DOE provided opportunity to the public to comment on the environmental impact analysis of DOE's proposed alternatives for meeting mission requirements, and gave equal consideration to all comments, regardless of how or where they were received. All comments received during the public comment period have been responded to in this NI PEIS.

Commentor No. 1464: Theresa Smith

From: Theresa Smith
[SMTP:TESABOUT@HEVANET.COM]
Sent: Wednesday, September 13, 2000 6:02:28 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford
Auto forwarded by a Rule

PUBLIC COMMENT

NO. I do NOT want Handford restarted. NOT to make medical isotopes or for ANY reason. Until we can resolve the issues of radio active wastes, it is irresponsible to create more. We may cure some cancer but at what cost? WE DON'T KNOW THE FULL COSTS.

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- || 1464-2
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Response to Commentor No. 1464

- 1464-1:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.
- 1464-2:** DOE notes the commentor's opposition to restarting FFTF to produce medical isotopes or for any other reason.
- 1464-3:** 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.
- 1464-4:** DOE notes the commentor's concerns about the need for radioactive isotopes in medical procedures and the wastes produced in their production. Radioisotopes are used for both therapy and diagnosis. In ongoing clinical testing, therapeutic isotopes have proven effective in treating cancer and other illnesses by cell-directed localized radiation therapy (i.e., deploying antibodies or carriers of radioisotopes to seek and destroy invasive cancer cells). This directed therapy can minimize adverse side effects (e.g., healthy tissue damage, nausea, hair loss), making it an effective, attractive alternative to traditional chemotherapy or radiation treatments. In addition to therapy for cancer and other illnesses, radioisotopes are also used for diagnostic purposes, such as imaging internal organs. Unlike conventional radiology, imaging with radioisotopes reveals organ function and structure, which provides additional data for a more accurate diagnosis, and assists in the early detection of abnormalities. The generation of wastes from the production of medical isotopes, which are small in comparison to the candidate sites' current generation rates, are discussed for each alternative in Chapter 4, Volume 1 of the NI PEIS. The additional waste generated would only have a small impact on the management of wastes at the candidate sites.

Potential health and safety impacts associated with normal operations, facility accidents, and transportation as a result of the medical isotope mission are relatively low and are discussed in detail in Chapter 4 of Volume 1 and appendixes H, I, and J of Volume 2 in the Final NI PEIS. In terms of potential human health impacts, the NI PEIS analysis

Commentor No. 1464: Theresa Smith (Cont'd)

Response to Commentor No. 1464

indicates that the most likely impacts would not result in additional cancer fatalities among the population surrounding the DOE facilities that may be selected for use.

The costs of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. DOE prepared a separate Cost Report to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS. Such an ancillary document need only be made available to the public prior to any decision being made under CEQ regulations (40 CFR Part 1505.1(e)). Nevertheless, DOE mailed this document to about 730 interested parties on August 24, 2000. The report was made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in the public reading rooms. DOE has also provided a summary of the Cost Report in Appendix P in the Final NI PEIS.

Commentor No. 1465: Galena Kline

From: Galena Kline
[SMTP:GALENAKLINE@HOTMAIL.COM]
Sent: Wednesday, September 13, 2000 7:02:57 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford Reactor Re_activation
Auto forwarded by a Rule

I just received an e_mail concerning the restart of reactors at Hanford. I am writing this brief message to say that I am opposed to this restart. Hanford has caused enough trouble for the Columbia River and its residents. Please do not put us in danger any longer.

Sincerely,

Galena Kline

1465-1

1465-2

Response to Commentor No. 1465

1465-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1465-2: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford and the risk of contamination to the Columbia River. 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 is committed to honoring this agreement.

The DOE missions delineated in the NI PEIS would not have an impact on 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.

Commentor No. 1466: Darlene Hickman

From: DHTRACK@aol.com%internet
 [SMTP:DHTRACK@AOL.COM]
 Sent: Wednesday, September 13, 2000 7:45:06 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Re: No to proposal to restart Hanford
 Auto forwarded by a Rule

As a citizen of the Pacific NW, I am very concerned about the US Dept. of Energy's proposal to restart Hanford's Fast Flux Test Facility Nuclear Reactor. I wish to have my opinion incorporated into the formal administrative record and taken into consideration when adopting the final record of decision. I would also like you to respond to my concerns before you make your record of decision.

Looking at Hanford's problems, e.g., crisis with tank waste treatment and damage caused by and radiation released from the Hanford wildfire, restarting FFTF is absolutely unacceptable. We must deal with the waste already at Hanford and focus on the clean_up mission. Tank wastes are already seeping towards the Columbia River. More wastes must not be added to those tanks. Clean_up must be the only priority. We must save our Columbia River__we do not get a second chance.

You have not told us how you will deal with non_proliferation issues or additional waste from FFTF. Should FFTF be restarted, that decision will be illegal under Federal law and will be overturned! Do the right thing, shut down FFTF right now and save the future of our Columbia River!

Sincerely,
 Darlene Hickman

1466-1

1466-2

1466-3

1466-2

1466-1

1466-4

1466-1

1466-5

Response to Commentor No. 1466

- 1466-1:** DOE notes the commentor's concerns. This NI PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR Parts 1500 through 1508 and 10 CFR Part 1021), respectively. DOE prepared a separate 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 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 September 8, 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 Nuclear Infrastructure Nonproliferation Impact Assessment in Appendix Q in the Final NI PEIS. DOE gave equal consideration to all comments. In preparing the Final NI PEIS, DOE carefully considered comments received from the public. 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.
- 1466-2:** DOE notes the commentor's concern regarding the existing cleanup mission at Hanford and the risk of contamination to the Columbia River. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement.

Commentor No. 1466: Darlene Hickman (Cont'd)

Response to Commentor No. 1466

The DOE missions delineated in the NI PEIS would not have an impact on 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.

None of the alternatives considered in this PEIS would add to the Hanford waste tanks.

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.

- 1466-3:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and support for Alternative 5, Permanently Deactivate FFTF.
- 1466-4:** 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

Commentor No. 1466: Darlene Hickman (Cont'd)

Response to Commentor No. 1466

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.

1466-5: See response to comment 1466-3.

Commentor No. 1467: Wolfgang F. Kluge

From: Wolfgang Kluge
[SMTP:KLUGES@EARTHLINK.NET]
Sent: Wednesday, September 13, 2000 1:35:43 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Cc: Ruth Yarrow
Subject: Hanford
Auto forwarded by a Rule

Reg.FFTF at Hanford

There is no reason to restart the FFTF at Hanford. There is no shortage of medical isotopes, our suppliers (mainly Canada) are very reliable. We need to clean up Hanford and not add to the pollution by restating FFTF.

Wolfgang F.Kluge MD.

1467-1

1467-2

Response to Commentor No. 1467

1467-1: The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. However, Canada only supplies a limited number of economically attractive commercial isotopes (primarily molybdenum-99), and it does not supply research isotopes or the diverse array of medical and industrial isotopes considered in the NI PEIS. As such, reliance on Canadian sources of isotopes to satisfy projected U.S. isotope needs would not meet DOE's mission requirements.

Although other manufacturers produce medical isotopes, DOE remains the key provider for a large number of isotopes 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. 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.

1467-2: DOE notes the commentor's opposition to Alternative 1, Restart FFTF, and concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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. The DOE

Commentor No. 1467: Wolfgang F. Kluge (Cont'd)

Response to Commentor No. 1467

missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities. DOE is fully committed to honoring this agreement.

In regards to additional pollution, the NI PEIS evaluated the maximum cumulative impacts to the public from all reasonably foreseeable Hanford Site activities over the 35 year time-frame. Table S-21 shows the maximum cumulative air pollutant concentrations for Hanford and the NI PEIS activities. As shown, Hanford is currently in compliance with all Federal and state ambient air quality standards, and would continue to remain well within the standards with the small contribution of air pollutants that would be attributable to the NI PEIS alternatives. Table S-22 shows the maximum radiological radiation exposure for Hanford and the NI PEIS activities. As shown, the dose to the maximally exposed individual would be expected to remain well within regulatory limits. Based on an exposure period of 35 years, 0.21 (<1) latent cancer fatalities would be expected to occur among the local population over the 35-year period as a result of Hanford related radiation exposure.

Commentor No. 1468: T. H. Vertrees

From: TVertrees@aol.com%internet
 [SMTP:TVERTREES@AOL.COM]
 Sent: Wednesday, September 13, 2000 8:01:09 PM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: FFTF startup
 Auto forwarded by a Rule

To Whom It May Concern.

The Fast Flux Test Facility is a resource which is completed, built with government funds and is being wasted by not being used. Our tax money built the facility and it should be used for our benefit.

Importing nuclear isotopes for cancer treatment and research is a wasteful use of our resources. With FFTF we can produce our own. The facility, which I have toured, is safe and a welcome part of our community. We're not saying "no nukes in our back yard" and those who oppose the use of any nuclear device are largely uninformed about them and live so far from them that their concern is irrelevant.

We, who live next door to FFTF, have dealt with nuclear reactors for more than 50 years, and now are tending to the nuclear cleanup. This industry has a history of such low accident rates that it could serve as a model for the nation.

We are foolish not to use the FFTF as a resource to produce isotopes for cancer treatment and research and for other types of research as well. This versatile facility does not have to have a weapons mission to be useful to mankind. Nuclear energy, per se, is a resource that can be as beneficial to mankind as we allow it to be. It is not, of itself, a menace or environmental hazard. Properly run, it is as fine an industry as we've seen — certainly much less hazardous to the public health and the environment as the mining and burning of coal for power in the nineteenth century.

I and my neighbors heartily support the startup and use of FFTF for peaceful and healthful pursuits.

T. H. Vertrees,
 Kennewick, WA

Response to Commentor No. 1468

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- | | |
|---------------|---|
| 1468-1 | 1468-1: DOE notes the commentor's opinion. 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. |
| 1468-2 | 1468-2: DOE notes the commentor's views. |
| 1468-3 | 1468-3: DOE notes the commentor's support for Alternative 1, Restart FFTF. |

Commentor No. 1469: Kathryn Kuskie

From: Kathy Kuskie[SMTP:KKUSKIE@TELEPORT.COM]
Sent: Thursday, September 14, 2000 12:26:09 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

Keep FFTF open! It is incredibly stupid to close FFTF when it can easily be used to create medical isotopes__an increasingly important part of medicine. Politics should not play a roll in something as important as the lives of our citizens!

If you would like to talk to me, I can be contacted at (503) 648_7285.

Thank you,
Kathryn Kuskie
Hillsboro, Oregon

1469-1

Response to Commentor No. 1469

1469-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1470: Eric Schmieman

From: eric schmieman[SMTP:SUSANS@BENTONREA.COM]
Sent: Wednesday, September 13, 2000 11:38:38 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Cc: susans@bentonrea.com%internet
Subject: FFTF restart
Auto forwarded by a Rule

I am opposed to the permanent shutdown of the Fast Flux Test Facility (FFTF). The draft EIS states many reasons in favor of restart but, I believe, misses an important point.

Most environmentalists are opposed to allowing a species to go extinct not because of the current contributions of the species to the ecology, but because of unknown future benefits. For example, if we allow salmon to go extinct we'll miss some good meals now, but, more importantly, we may be forever forfeiting a future cure for AIDS or cancer.

If we allow the permanent closure of FFTF now, we will forgo some immediate benefits as stated in the draft EIS. However, we need to recognize that it is highly unlikely that a future government will ever again garner the public will to build a similar machine. If we allow the permanent closure of FFTF, we may be forever forfeiting a future outcome of enormous benefit that is not now visible to us.

Please do not permanently shutdown the FFTF. Preserve yet unidentified future benefits likely to spring from this unique national resource.

Thanks for considering my comments

Eric Schmieman, PhD
47608 N. Whitmore Rd.
Benton City, WA 99320
509_588_2919
susans@bentonrea.com

Response to Commentor No. 1470

1470-1 **1470-1:** DOE notes the commentor's support for Alternative 1, Restart FFTF, and opposition to Alternative 5, Permanently Deactivate FFTF.

Commentor No. 1471: Kevin Welsh

From: KWONE@aol.com%internet[SMTP:KWONE@AOL.COM]
 Sent: Thursday, September 14, 2000 1:16:46 AM
 To: INFRASTRUCTURE_PEIS, NUCLEAR;
 helen@mail.house.gov%internet;
 mike.simpson@mail.house.gov%internet;
 governor@governor.state.id.us%internet
 Subject: (no subject)
 Auto forwarded by a Rule
 September 13, 2000

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

Dear Ms. Brown:
 Your Department's recent proposal to expand the civilian nuclear infrastructure, outlined in the Draft Programmatic Environmental Impact Statement for accomplishing expanded civilian nuclear energy research and development and isotope production mission in the United States, including the role of the Fast Flux Test Facility, raises significant nuclear weapons proliferation and environmental issues.

As a member of the Snake River Alliance I have become aware of the serious nuclear contamination and waste problems at INEEL. INEEL is one of the most contaminated areas in America. The Department's recent estimate on cleaning up our site is \$22 billion and is expected to take 50 years__longer than any other DOE facility. In addition, we have over 360 individual superfund sites within the 890 sq. mile area that comprises INEEL. With this known, the last thing we need is a plan to generate more nuclear waste at a site that needs more waste like the DOE needs security scandals. Out of concern for Idaho's environment, I strongly urge you not to pursue the plutonium_238 production mission outlined in your PEIS.

One of the most daunting problems confronting cleanup at major DOE facilities such as Hanford and INEEL, is the solidification of liquid high_level nuclear waste. Your current plan for plutonium_238

1471-1

1471-2

Response to Commentor No. 1471

- 1471-1:** The commentor's position regarding plutonium-238 production at INEEL is noted. Production of plutonium-238 at one or more of the candidate sites would be conducted in support of NASA's deep space missions Volume 1, Section 1.2.2 of the NI PEIS). As discussed in Sections 4.3.2.1.13 and 4.4.2.1.13 of the EIS, selection of the Fluorinel Dissolution Processing Facility and/or the Advanced Test Reactor to support production of plutonium-238 would have no significant impact on the waste management system at INEEL. Use of any of the facilities proposed in this PEIS for the stated missions would not impact cleanup missions at DOE sites.
- 1471-2:** The use of proposed alternative facilities associated with processing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or INEEL. At INEEL, the tanks would not be used although certain facilities at the Idaho Nuclear Technology Engineering Center (INTEC) would be used to treat the wastes resulting from processing the irradiated targets. These are reliable systems that would process a maximum of 1,050 cubic meters of low-level radioactive waste over the 35-year nuclear infrastructure operational period. The higher activity waste would be treated as a solid form via a stand-alone vitrification system, separate from any tank waste treatment system. At Hanford, the existing high level radioactive waste facilities would not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.
- 1471-3:** 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

Commentor No. 1471: Kevin Welsh (Cont'd)

production entails the generation of approximately 288,000 additional gallons of this waste over the project's 35 year span. While this is a small portion of Hanford's high level waste, it is approximately one_fifth of what we have remaining here in Idaho, which makes it a very significant amount. Previous leakage of this waste at INEEL and Hanford threatens our water supplies. What we certainly don't need is any more of this most highly problematic of waste forms.

Given the certain risks inherent in production of plutonium, the justified need for this material would have to be tremendous, and the PEIS does a poor job of providing ample justification. Beyond the risks involved in production, and the aforementioned resulting waste problem, there is also the issue of an accident occurring upon lift_off or reentry of a space probe carrying this material. The cassini probe, launched in 1997, carried 72 pounds of Pu_238. The potential for an explosion during lift_off or upon an inadvertent reentry during the fly_by phase, gave many in the scientific community pause, including scientists within NASA. According to NASA's own conservative estimate, a burn up upon reentry of the cassini probe could have caused 2,300 cancer fatalities, independent analyses ranged much higher. This potential for a catastrophic release of this extremely toxic material will remain so long as the US government remains committed to the use of plutonium_238. If DOE is to have a role in developing power systems for NASA's instrumentation, it should focus on promising solar technology, an alternative that has been promoted in the European scientific community.

There are also proliferation concerns as it pertains to this plan. A return to production of this isotope, however poorly justified, means a return to the use of aqueous reprocessing at DOE facilities where this technology has been used to extract bomb material for the weapons program. From President Carter to presidents Bush and Clinton, US policy has been to halt reprocessing in this country in order to set a global precedent to curtail the spread of nuclear weapons material_a noble effort in serious need of bolstering through action.

**1471-2
(Cont'd)**

1471-3

1471-4

1471-5

Response to Commentor No. 1471

supply of plutonium-238, DOE's ability to support future NASA space exploration missions may be lost.

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

Potential health and safety impacts associated with normal operations, facility accidents, and transportation as a result of the proposed production of plutonium-238 are relatively low and are discussed in detail in Chapter 4 of Volume 1, and Appendixes H, I, and J of Volume 2 in the Final NI PEIS.

1471-4: DOE notes the commentor's concern for NASA's use of nuclear materials for space missions and interest in the development of alternative energy sources for 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. The Cassini fly-by occurred exactly as planned, with no release of nuclear material.

1471-5: The commentor is correct in stating that the aqueous processing technology that would be used to separate plutonium consisting of over 80 percent plutonium-238 and neptunium from the irradiated target is similar to the technology that was used to extract plutonium-239. However, unlike plutonium-239, plutonium-238 is not used in nuclear weapons, but rather it would be used as a power source for NASA space missions. The technology that is discussed in EIS Sections S.3, 2.2.3 and A.1.4 would be used to chemically separate plutonium-238 and neptunium from irradiated targets and not from irradiated or spent nuclear fuel whereas reprocessing separates weapons grade plutonium-239 from irradiated nuclear fuel. As discussed in the separate nonproliferation impact assessment report, use of this technology to produce plutonium-238 from irradiated targets will not create a nonproliferation threat. DOE is committed to full compliance with and support of the U.S.

Commentor No. 1471: Kevin Welsh (Cont'd)

Indeed, an otherwise lukewarm Nuclear Infrastructure Nonproliferation Impact Assessment conducted by your Office of Arms Control and Nonproliferation questions whether our commitment to nonproliferation isn't weakened by the use of the Fluorinel Dissolution Process Facility within Building 666 at INEEL. INEEL's reprocessing facility is next door to a wet storage unit for Navy spent fuel, which contains a greater than average amount of highly enriched uranium. It was reprocessed from 1953 to 1989 at INEEL for the weapons program. Use of this facility to carry out plutonium_238 extraction, especially considering the dubious need for this isotope, at the very least raises the concern that DOE is not fully committed to ending reprocessing. The international community cannot be expected to trust DOE's civilian_mission claim when an agency devoutly committed to development of weapons uses a nuclear weapons technology at a weapons facility.

Considering all these factors that could adversely affect our environment and commitment to nonproliferation, I strongly urge you to select alternative 5 in the current PEIS. This alternative would allow the Advanced Test Reactor at INEEL to continue producing medical and industrial isotopes for the commercial sector and would not lead to the production of anymore highly radioactive liquid waste at Hanford or INEEL. The main mission at these two facilities has been and should continue to be cleanup of the mess left over from previous nuclear weapons work. Additional waste production would interfere with this already difficult and expensive work. Alternative 5 also calls for the decommissioning of the FFTF reactor at Hanford. FFTF is an aging breeder reactor whose use would be inconsistent with United States policy to discourage use of this technology due to the capability this class of reactors has to produce more plutonium than is consumed. Thank you for the opportunity to comment on this plan.

Sincerely,
Kevin Welsh

1471-5
(Cont'd)

1471-6

Response to Commentor No. 1471

policy prohibiting reprocessing. The juxtaposition of INEEL Building 666 to wet storage of highly enriched uranium Navy spent nuclear fuel and its previous mission of reprocessing spent nuclear fuel were considered in the separate nonproliferation impact assessment.

1471-6: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. It should be noted that medical isotopes would continue to be produced at ATR regardless of which alternative is selected in the Record of Decision. The FFTF would produce spent nuclear fuel and low-level radioactive waste, and as discussed throughout Section 4.3 of Volume 1, none of the proposed alternatives would generate high-level radioactive waste or add waste to the high-level waste tanks at Hanford. Also, it should be pointed out that while FFTF supported the breeder reactor program, it is not itself a breeder reactor, but rather a fast flux research reactor.

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.

With respect to cleanup of wastes at Hanford or INEEL, the proposed action and the existing cleanup missions are independent programs and actions related to one will not impact the other. While the cleanup activities at both Hanford and INEEL are high priority to DOE, it should be noted that the cleanup of legacy wastes is beyond the scope of the NI PEIS.

Commentor No. 1472: Carol Witherell

From: Carol Witherell[SMTP:CSW@LCLARK.EDU]
Sent: Thursday, September 14, 2000 12:55:35 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Hanford reactor
Auto forwarded by a Rule

I am completely opposed to restarting the Hanford Nuclear Reactor for safety and environmental reasons that have been well documented by the Heart of America organization.

Sincerely,

Carol Witherell

Carol S. Witherell, Professor of Education
Program in Teacher Education, Campus Box 14
Lewis & Clark College
0615 SW Palatine Hill Rd.
Portland, OR 97219 PHONE: (503) 768_7766 FAX: (503)
768_7764

1472-1

Response to Commentor No. 1472

1472-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1473: Gemma Hall-Hart

From: Greg and Gemma Hart
 [SMTP:GGBBHART@AZ.COM]
 Sent: Thursday, September 14, 2000 12:09:51 AM
 To: INFRASTRUCTURE_PEIS, NUCLEAR;
 Ruthy@wpsr.org%internet
 Subject: Hanford
 Auto forwarded by a Rule

I favor OPTION FIVE _ permanently deactivate FFTF with no new missions. Hanford is the most highly contaminated nuclear site in the western world. The mission at Handford is CLEAN_UP not productin.

Gemma Hall_Hart
 908 16th Street
 Bellingham, Wa. 98225.

1473-1**1473-2****Response to Commentor No. 1473**

1473-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

1473-2: DOE notes the commentor's concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.

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

Commentor No. 1474: Dave Mendenhall

From: Dave Mendenhall
[SMTP:DBMEND@PACIFIER.COM]
Sent: Wednesday, September 13, 2000 11:43:14 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF at Hanford
Auto forwarded by a Rule

I urge you to act responsibly and not add to the leaking and dangerous radioactive waste at Hanford.

When the site is cleaned up (if it is even possible), then would be the time to mull future uses!

Sincerely,

Dave Mendenhall
Portland, OR

1474-1

Response to Commentor No. 1474

1474-1: DOE notes the commentor's concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement.

Waste tank issues are not within the scope of the NI PEIS, as none of the alternatives considered would add to these waste volumes.

Commentor No. 1475: KDDNEP@aol.com

From: KDDNEP@aol.com%internet
[SMTP:KDDNEP@AOL.COM]
Sent: Friday, September 15, 2000 9:34:24 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF Restart YES!
Auto forwarded by a Rule

Dear Sec. of Energy,

Please have the FFTF be your preferred alternative to fulfill the need for medical isotopes. Please restart FFTF!

Thanks,
Nancy P

1475-1

Response to Commentor No. 1475

1475-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1476: Sid Altschuler

From: SID ALTSCHULER[SMTP:SALT@BOSSIG.COM]
Sent: Thursday, September 14, 2000 1:34:45 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Comments on Restarting FFTF
Auto forwarded by a Rule

This email expands comments I made at Richland on August 31st.

I recommend AGAINST the accelerator option.
Accelerators have not been of much use in producing isotopes in any appreciable quantities.

In the early '50s, a very large Linac (linear accelerator) was shut down at UCRL (the University of California Radiation Laboratory, now Lawrence Livermore National Laboratory). It had been built to produce plutonium but had been unable to compete with the production reactors at Hanford and Savannah River. At a seminar at Berkeley, it was mentioned that it was a bargain. Each proton only cost only one ten quadrillionth of a dollar (\$E_16). Unfortunately, a gram of plutonium made this way would cost 400 times more than if a reactor were used.

In the '60s, Atomic Energy of Canada Ltd. considered the ING Project (Intense Neutron Generator) which used a proton accelerator to produce neutrons by spallation. They never broke ground.

In the '70s, FMIT (Fusion Materials Investigation), a similar facility was also considered. Again, ground was not broken.

In the '80s, an accelerator was also the dark horse as a candidate for the New Production Reactor to no avail.

The problem is that Avogadro's number is just too large given the energy inefficiency of an accelerator!

An additional problem today is that by the time a accelerator system is developed, designed, and permitted, there will be, barring a sea change in policy, a major shortage of the electrical generating capacity required. Building the required capacity opens a new can of worms.

1476-1

1476-2

Response to Commentor No. 1476

1476-1: DOE notes the commentor's opposition to Alternative 3, Construct New Accelerator(s), and support for Alternative 1, Restart FFTF.

1476-2: The NIP EIS evaluates alternative ways of achieving the program objectives on a programmatic basis. Therefore both reactors and accelerators were considered in the evaluation of irradiation facilities. DOE acknowledges that all of the alternatives are not equally effective in meeting the program objectives.

DOE acknowledges that the high-energy accelerator provides a significant load on the local electrical grid. In the event that the Record of Decision selects the high-energy accelerator for further development, subsequent NEPA review will assess grid stability and other electrical load assessment criteria in the evaluation of alternative site locations.

Commentor No. 1476: Sid Altschuler (Cont'd)

There is another MAJOR RISK which has NOT been addressed in the EIS. It is the political risk which will occur if the demand for isotopes suddenly increases (due to the development of a new treatment for even a single relatively common form of cancer) and the capacity to produce them is not available. It will make the outrage which occurred when the Salk vaccine was not immediately available in sufficient quantities pale in comparison. The Washington Post's Herblock had an excellent cartoon at the time to which you may choose to refer. The activism over AIDS will be multiplied many times as will the lawsuits.

"A word to the wise is sufficient."
RESTART the FFTF!!!

1476-3**1476-4****Response to Commentor No. 1476**

1476-3: DOE notes the commentor's viewpoint. DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing dates 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.

1476-4: See response to comment 1476-1.

Commentor No. 1477: Ida Isley

From: IDA115@aol.com%internet
[SMTP:IDA115@AOL.COM]
Sent: Thursday, September 14, 2000 2:17:11 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: (no subject)
Auto forwarded by a Rule

I would like to express my request that FFTF be restarted and used for cancer research and for whatever benefits it could have to the American people.

Sincerely, Ida Isley

1477-1

Response to Commentor No. 1477

1477-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1478: Arika S. Grace-Kelly

From: Arika S.
 Grace_Kelly[SMTP:ARIKAGRACE@EARTHLINK.NET]
 Sent: Thursday, September 14, 2000 4:16:25 AM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: nuke waste
 Auto forwarded by a Rule

no nuclear waste.

no fftf. do not restart hanford!

Man, can't you people stop for a minute to think about how your grandchildren are going to feel when they have to clean up your mess, that's if we make it that far? if you can't clean it up, don't mess it up! do you not care about the animals and plants? if it isn't your house, your family, your pets, you just don't give a shit? do you have any mercy or sense of responsibility at all? if you do this, you will die a horrible miserable death. this isn't a threat, it's simple cause and effect. you will pay for your misdeeds, one way or another. you'll get cancer, or watch your loved ones get it, or both, or you'll watch the world suffocate and know you're the culprit, or something. but you won't get away with it. there is no justification for killing...anything, present or future. don't kid yourself, you will be sorry! jeez! how many times do we have to explain it to you? THERE IS NO JUSTIFICATION FOR FUCKING UP THE ENVIRONMENT FOR MONEY OR BECAUSE WE CAN! if you do this, i'm done with you all. i'm not coming back here ever again! the problem is the freakin' solution. you can't safely dispose of it, don't make it! If you don't like the taste of it, don't eat it. how hard is this concept?

|| 1478-1

|| 1478-2

|| 1478-1

|| 1478-3

|| 1478-1

Response to Commentor No. 1478

- 1478-1:** The restart of FFTF or any of the other proposed alternative facilities would not impact the schedule or available funding for existing cleanup activities at Hanford, INEEL, or ORR. The NI PEIS addressed the environmental impacts due to the treatment, storage, and disposal of the waste generated by the proposed action for all alternatives and alternative options. Waste minimization programs at each of the proposed sites are also addressed. These programs will be implemented for the alternative selected in the Record of Decision. The waste generated from any of the proposed alternatives in the NI PEIS will be managed (i.e., treated, stored and disposed) in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations and applicable DOE orders.
- 1478-2:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF.
- 1478-3:** DOE notes the commentor's concerns. Potential health and safety impacts associated with normal operations, facility accidents, and transportation as a result of the proposed action are relatively low and are discussed in detail in Chapter 4 of Volume 1 and appendixes H, I, and J of Volume 2 in the Final NI PEIS.

Commentor No. 1479: James J. Hurst

From: jimhurst[SMTP:JIMHURST@GATEWAY.NET]
 Sent: Thursday, September 14, 2000 10:04:13 AM
 To: INFRASTRUCTURE_PEIS, NUCLEAR
 Subject: Public Comments, Isotope Production & the FFTF
 Auto forwarded by a Rule

To: Office of Nuclear Energy
 Subject: The FFTF & Isotope Production

This text is in response to your request for input concerning the role of the FFTF in Isotope Production.

For some years the Fast Flux Test Facility has been in a standby mode and can best be described as a facility long in search of a mission. It was designed to do one thing well. But it was put in standby mode because it no longer had any programmatic support. One must ask if this reactor has the ability to be converted to isotope production without a massive infusion of dollars to retool it to do that which it was not designed to do. A second concern is the age and condition of the facility infrastructure in part due to radiation damage.

In a recent AIP mailing, the DOE is described as finding its isotope production infrastructure "diminished" because of the shutdown of the HFBR at Brookhaven & the cyclotron at Oak Ridge.

Two observations can be made. The FFTF standby mode costs have for sometime been twice what the DOE said it could not afford in the case of the HFBR being brought back on line. This attitude is unacceptable in a time of tight research dollars. I also note that the DOE must find its ability to do neutron scattering research in the US "diminished" due to a political (not environment, safety or health) decision concerning the HFBR restart.

Therefore, the solution to the issue of isotope production should not even consider the FFTF. The DOE must consider a reactor that can support a dual role. The FFTF is not a candidate.

1479-1**1479-2****Response to Commentor No. 1479**

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- 1479-1:** As stated in EIS Section 2.3.1.1.2, several upgrades would be implemented if a decision to restart FFTF was made by DOE. These upgrades would improve efficiency and reliability, minimize waste, and conform to current industry standards. The FFTF is in excellent condition and evaluations have shown that it has sufficient life remaining to fully support the proposed 35 year mission. The age and condition of the FFTF facility infrastructure will be considered by DOE in its decision making process. The separate cost report accounts for costs associated with expected FFTF facility modifications, including those required to support the new missions.
- 1479-2:** DOE notes the commentor's opposition to Alternative 1, Restart FFTF. It should be noted that the FFTF would not be used as a single purpose reactor under the proposed action, rather it would be used to fulfill each of the three project missions. As discussed in Volume 1, Section 2.6.1 of the NI PEIS, the HFBR was initially considered as a potential irradiation source to support the proposed action, but was subsequently dismissed from further consideration after Secretary Richardson decided the facility would be permanently shut down.

Commentor No. 1479: James J. Hurst (Cont'd)

Political consideration played an overwhelming role in Secretary Richardson's decision on the shutdown of the HFBR. There have clearly been political considerations made to keep the FFTF in its current mode. DOE must now consider that playing politics does not support good science or technology. Look for a dual use facility. A restart of the HFBR should be considered as a sensible option. The political climate seems to be changing in New York, and the current Secretary will soon leave office.

If restart is not an option, then consider a new dual use facility that serves the same function as the HFBR did (and still can do).

James J. Hurst
207 Oak Street
Medford, NY 11763_4035

separate copy:
Hon. James Sensenbrenner, Chair,
House Science Committee

**1479-2
(Cont'd)**

Response to Commentor No. 1479

Commentor No. 1480: Shelly Wandler

From: Shelly Wandler[SMTP:SJWWILDONE@NETSCAPE.NET]
Sent: Thursday, September 14, 2000 10:36:53 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF startup
Auto forwarded by a Rule

I am greatly saddened by the fact that for the past 7 years a facility such as FFTF has been in such down. Not only has this been a great loss of tax payer money, but it also serves as an excellent example for the waist of Government spending in its inability to make decisions. FFTF was at the top of it's class and still is. It is unfortunate that so many other possibilities of it's continuing operation have been passed by. It seems that now we are down to the final one and this happens to be one of the most important concerning humanities health today. The fact that every expert over the past seven years has given FFTF nothing but the highest regards should be proof enough that those with political pull in Seattle & Portland know nothing of the truth when they fight against the startup of FFTF. Considering the fact that it's startup to produce medical isotopes would not only be extremely beneficial to the medical community in the US but abroad as well, and the continued fight against this by some of those same politicians is further proof of their ignorance. FFTF would be beneficial to the medical community, the millions of people suffering from various cancers world wide, as well as the space exploration industry. My faith in the Government, especially DOE has been greatly damaged over the past 7 years because of its true ignorance in the benefits of such a facility as FFTF. I can only hope that DOE and the rest of the Government will finally come to their senses and give FFTF the startup notice it so rightly deserves for the facility itself & the rest of Humanity.

Shelly Wandler
Concerned Citizen

Response to Commentor No. 1480

1480-1 **1480-1:** DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1481: Randy Lishka

From: RLISHKA@aol.com%internet
[SMTP:RLISHKA@AOL.COM]
Sent: Thursday, September 14, 2000 12:58:32 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: help
Auto forwarded by a Rule

Ever have a loved one die of Cancer? Don't listen to uncaring people that can be bought be pac money. Using the Fast Flux Test Facility reactor to produce medical isotopes is a start to ending the death of many people who's representatives couldn't care less about.

Randy Lishka
A concerned citizen

1481-1**Response to Commentor No. 1481**

1481-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1482: Mary R. Colton

From: mrcolton2@juno.com%internet
[SMTP:MRCOLTON2@JUNO.COM]
Sent: Thursday, September 14, 2000 1:59:54 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF Comments
Auto forwarded by a Rule

Attn: Collette Brown:

I am in favor of starting the FFTF for medical and industrial research.

I have lived in the Richland area since 1983, and worked at Hanford for 14 years before retiring. I worked at the N Reactor the 300 area, K Basin and in the orth Richland area. During this time, I had the opportunity of touring the FFTF area and buildings. What I saw impressed me very much, the stainless steel equipment that was installed and costing millions of dollars to sit and do nothing is appalling.

Why not take advantage of this facility. Instead of spending our tax payers money on duplicating this area, and now spending billions of dollars to do so.

It is also appalling that the Heart of American, NW can throw so much weight in an area they don't even truly know about. They don't seem to care how much money it is costing them and the tax payers to prolong the issue.

What do we have in Washington, D.C. A bunch of dummies that can't understand the more we tarry on this issue the more money it will take. Which in the long run will take away from the very thing that FFTF is trying to do, develop medical research, that some day might save a member of their family.

As I see it _ the bottom line is political and to hell with the money it will cost, or the medical research that can help to days generation and generations to come.

Mary R. Colton, mrcolton2@juno.com

Response to Commentor No. 1482

1482-1

1482-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

1482-2: DOE notes the commentor's views. Selection of facilities and site locations for accomplishing expanded civilian nuclear energy research and development and isotope production missions is not a political decision. 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.

1482-2

Commentor No. 1483: Dennis Lupkes

From: lupkde@ksd1mail.org [mailto:lupkde@ksd1mail.org]
 Sent: Wednesday, August 30, 2000 11:37 PM
 To: FFTF@rl.gov
 Subject: Comments from FFTF Talk to Us

1 Name = Dennis Lupkes
 2 Comments = Dear Administrator:

Considering the tremendous breakthroughs constantly being made in genetics and cancer research, the days of nuclear medicine as a standard cancer treatment are probably numbered. Shortly, the nuclear material provided by FFTF will not be needed in great enough quantity to warrant the money spent. It will be more cost effective to buy the material elsewhere.

Not knowing the current available service life of the facility, I would say run commit to operating it for five years to produce the medical isotopes and other materials and then pull the plug. JUST DO SOMETHING.

Thanks,

Dennis Lupkes
 Kennewick High School

1483-1

1483-2

Response to Commentor No. 1483

1483-1: DOE notes the commentor's concern that medical breakthroughs may reduce the need for radioisotopes. However, 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.

For nearly 50 years, DOE has actively promoted the use of isotopes to improve the health and well-being of U.S. citizens. DOE's use of its unique technologies and capabilities to develop isotopes for civilian purposes has enabled the widespread application of medical isotopes seen today. While its market share is a small fraction of total world isotope production, 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. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the U.S. to meet future 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. 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.

Commentor No. 1483: Dennis Lupkes (Cont'd)

Response to Commentor No. 1483

1483-2: DOE notes the commentor's support for Alternative 1, Restart FFTF. It should be pointed out that it would not be cost effective to operate FFTF for only 5 years. Further, limiting FFTF operation to 5 years would not satisfy the long-term needs of the three DOE missions.

**Commentor No. 1484: Gail Hudson McCarthy
and John W. McCarthy**

2000-022414 Aug 29 p 2:41

Secretary, The

From: Hudson-McCarthy [hudson@gorge.net]
Sent: Tuesday, August 29, 2000 12:11 AM
To: Secretary, The
Subject: Re: Hood River, OR, DOE Meeting 08-29-00 relative to start up of FFTF at Hanford

Dear Secretary Richardson: I implore you to please read the following plea to shut down FFTF at Hanford, WA. We have just witnessed the information meeting relative to the EIS that was presented only last Friday to the public eye; therefore, none of us has had time to review the statements made in it. However, we do have watchdog groups here that are very "on top of" all information relative to this process. We believe that you are not receiving all of the input that various groups from the Columbia River Gorge; and that you are being "fed" only the positive side from those persons interested in keeping their DOE alive and well at Hanford. You need to investigate and be assured of the thousands of residents who are opposed to this start up; Collette Brown tonight admitted that they cannot redistribute the future waste from the plutonium - and that it would be deposited underground at the Hanford site. The citizens of this area cannot believe that this is the fact!! You have had several billions of dollars already of the taxpayers monies going out the door to contractors, who eventually throw up their hands and say that they cannot clean up the waste or even contain it properly. This site is one of the most toxic waste dumps on this planet; it is insane to produce more waste until a process to contain what is already deposited is completed. Please do not ignore these statements of the evening of 08-29-00 at Hood River, OR. These citizens are opposed to your plan to start up the FFTF OR to begin commercial processes of any nuclear waste products. We have been backed up by Senator Ron Weiden, OR, and others in the government in a statement read this evening. Thank you. If you care to respond, it would be greatly appreciated. Also, if you have an interest, there are people who would like to visit you in person to discuss this plan. Gail Hudson McCarthy, resident of WA State - John W. McCarthy, resident of WA State - our grandchildren and their future children!

1484-1

1484-2

1484-3

1484-4

1484-2

1484-1

Response to Commentor No. 1484

1484-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF, and opposition to Alternative 1, Restart FFTF. 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.

1484-2: DOE notes the commentor's remarks concerning the views expressed during the Hood River, Oregon 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. DOE is aware that there is a considerable difference of public opinion regarding the alternatives evaluated in this NI PEIS to accomplish the DOE missions, including direct support as well as opposition to Alternative 1, Restart FFTF. In compliance with NEPA and CEQ regulations, DOE provided opportunity to the public to comment on the environmental impact analysis of DOE's proposed alternatives for meeting the mission requirements, and gave equal consideration to all comments, regardless of how or where they were received. In preparing the Final NI PEIS, DOE carefully considered comments received from the public.

1484-3: 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

Commentor No. 1484: Gail Hudson McCarthy and John W. McCarthy (Cont'd)

Response to Commentor No. 1484

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.

Sections 4.3.1.1.13, 4.3.2.1.13, 4.3.3.1.13, and 4.4.3.1.13 were revised to address comments received during the public comment period. This section now states that “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. 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 activities (i.e., treatment and on-site storage) as described in this NI PEIS would be the same. In addition, either waste type would require disposal in a suitable repository. If it is transuranic waste, it would be nondefense waste and could not be disposed of at WIPP under current law. Because nondefense transuranic waste has no current disposal path, DOE Headquarters' approval would be necessary before a decision is made to generate such waste, as required by DOE Order 435.1. “If the waste is classified as high-level radioactive waste, it is assumed for the purposes of this analysis that Yucca Mountain, Nevada, if approved, would be the final disposal site for DOE's high-level radioactive waste.”

- 1484-4:** DOE notes the commentor’s concern regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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 is fully committed to honoring this agreement. The DOE missions delineated in the NI PEIS would not have an impact on Hanford cleanup activities.

*Commentor No. 1485: Daniel LaVassar**Response to Commentor No. 1485*

2000-016096 Jun 20 p 5:23

3430 26th Ave West
Seattle, WA 98199

Secretary Richardson
U.S. Department of Energy, Headquarters
Forrestal Building
1000 Independence Avenue, S.W.
Washington, DC 20585
June 12, 2000

Dear Secretary Richardson:

I am writing to you in support of restarting the Fast Flux Test Facility. I believe this facility can be instrumental in increasing the United States' supply of radioactive isotopes for medical and industrial uses. This reactor is a sitting investment of one billion dollars, and would cost more than twice that to replicate. It would also be much quicker to restart than building an as-yet-unplanned facility designed to produce medical isotopes. I feel it would be criminal to shut down such a national asset.

I realize the issue is clouded in the legacy of nuclear weapon production and proposals to use the facility for tritium production, but I urge you to look at the issue from a dispassionate point of view. There is a growing need for medical isotopes, and we rely on foreign sources for ninety percent of our supply. With new applications for isotopes being developed every year, such as for treating blocked arteries to ensure they do not relog, to name just one potentially lucrative market, can we really afford to rely on uncertain supplies?

The FFTF also represents an opportunity to create a revenue stream. Some project \$88 million worth of revenues from isotope sales by 2008. Perhaps these revenues could be utilized in Hanford cleanup. This would address the concerns of critics that a restart diverts funds from cleanup.

I hope you will examine this issue, and come to the conclusion I have: a restart makes good scientific and financial sense.

Sincerely,



Daniel La Vassar

1485-1

1485-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

1485-2

1485-2: DOE notes the commentor's views regarding the use of revenues from isotope production in FFTF for Hanford cleanup. The estimated costs of the range of reasonable alternatives are presented in the Cost Report, summarized in Appendix P of the Final NI PEIS. However, the Cost Report is not a cost-benefit analysis. While it is reasonable to believe that the benefits of medical isotopes are substantial, the purpose of this NI PEIS is to describe the nuclear infrastructure missions (Section 1.2 of Volume 1), a range of reasonable alternatives for satisfying the mission requirements (Section 2.5 of Volume 1), and the environmental impacts that would result from implementation of the alternatives. According to 40 CFR Section 1502.23, if a cost-benefit analysis exists, it must be reported and summarized in the NI PEIS.

1485-1

Commentor No. 1486: Chris Fick

2000-022421 Aug 29 p 2:42

Secretary, The

From: chris fick (c_fick@hotmail.com)
Sent: Saturday, August 26, 2000 3:29 AM
To: Secretary, The
Subject: hanford

Dear Secretary Richardson,

I am writing you today to strongly voice my opposition to the proposed restart of the Fast Flux Test Facility nuclear reactor at Hanford. Not only has nuclear power been shown to be a dangerous and nefarious method of energy, Hanford has repeatedly been shown to be leaking toxic chemicals and destroying the environment, and human health along with it, since its construction.

Restarting the reactor would produce large amounts of nuclear waste, adding to nuclear waste that is already an overwhelming burden.

Furthermore it would take away from money that was directed for clean-up in a sight in desperate need of such a clean up. Hanfords only mission is supposed to be clean-up!! Please do not exacerbate this current problem with Hanford into a larger one.

I strongly urge you to put an end to the idea of restarting this reactor, Hanford has only caused problems for the entire region. Please fix these problems, do not cause more!

Sincerely,
Chris Fick
Portland, Oregon

Get Your Private, Free E-mail from MSN Hotmail at <http://www.hotmail.com>

1486-1

1486-2

1486-3

1486-2

Response to Commentor No. 1486

1486-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1486-2: 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 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 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.

1486-3: 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 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.

Commentor No. 1487: Paul Strand

Secretary, The

022359

From: Paul Strand [pstrand@tricity.wsu.edu]
Sent: Wednesday, August 23, 2000 11:13 AM
To: Secretary, The
Subject: FFTF

Dear Mr. Secretary,

As someone who has lost more than one relative to cancer, I hope you will decide in favor of starting FFTF at the Hanford Nuclear Reservation. Given the country's potential need for medical isotopes, it seems that FFTF is a tool that should be used rather than shut down for political reasons.

Paul Strand, Ph.D.
8640 W. Klarnath Ave.
Kennewick WA 99336

1487-1

Response to Commentor No. 1487

1487-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1488: Laurel Piippo

PEOPLE FOR A KINDER AND GENTLER TREATMENT FOR CANCER



CANCER SURVIVOR LAUREL PIIPPO

FFTF 1334 Sacramento Street Richland, WA 99352 August 1, 2000

Colette E. Brown Public Hearings on FFTF, US Department of Energy Office of Space and Defense Power Systems, NE-50 19901 Germantown Road Germantown, Maryland 20874-1290

Copy for Secy of Energy Bill Richardson

Dear Ms. Brown,

As a three-time cancer survivor who has lived in Richland since 1951, I plan to attend public hearings in Hood River on August 28 and Portland August 29 to advocate restarting FFTF. Our children were born here, their spouses lived here, and our seven grandchildren were born and reared here. I am the only one of 13 Piippos afflicted with cancer. Never having worked at Hanford, I don't blame Hanford. Apparently I am unkillable, having lived 49 of my 73 years a few miles from the waste dump and am strong and healthy, thanks to and in spite of the brutality of traditional cancer treatment -- slash, burn, poison (surgery, radiation, chemotherapy).

Three other Tri-Cities residents are coming with me to the hearings. I especially want Betty Bergdahl to testify. She is 88 years old, moved here in the 1940's, had four children here, and has many grandchildren and great-grandchildren. She and her husband built a house on the Columbia River where the kids swam. NO ONE IN THEIR ENTIRE FAMILY had or has cancer. Anti-nuclear fanatics need to hear this, and so does DOE secretary Richardson. Diane Aungst, age 86, moved here with her husband in 1951, had a child here, and no one has cancer. Kay Hess, Kennewick, will also attend the hearings. Her daughter had surgery for a pre-cancerous condition. All of us want FFTF activated for the production of medical isotopes for a kinder gentler treatment of cancer.

I don't understand why an issue so vital to the health of the American people should be determined by showmanship at public hearings. Listen to the scientists, please! I don't know the most fair way for all points of view to be heard equally at these hearings; but if you have people sign up in advance, Pollette and his gang will be there at 3 a.m. to monopolize the time. Perhaps a roving microphone works best, but please be sure your master of ceremonies hears from Betty Bergdahl. I'll just roam around in my shirt. See above picture!

Please don't send me any more lengthy reports. The last box cost \$10 postage. I don't want tax dollars spent to mail me material I will never read. Thank you.

Sincerely, Laurel Piippo LAUREL PIIPPO

Copies to: Secy of DOE Richardson US Senator Patty Murray US Senator Slade Gorton US Congressman Doc Hastings

2000-021026 Aug 11 p 3:57

Response to Commentor No. 1488

1488-1

1488-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

1488-1

1488-2: The public hearing format was designed to be fair and unbiased. The public hearing format used was based on stakeholder input and was presented in the Notice of Availability (65 FR 46443 et seq.) for the Draft NI PEIS. This format was intended to encourage public participation, regardless of the motivation for attending the hearing. It provided an opportunity for the participants to meet one another, exchange information, and share concerns with DOE personnel available throughout the course of each hearing to answer questions. The meetings were facilitated by an independent moderator to ensure that all persons wishing to speak had an opportunity to do so. Persons wishing to comment were selected at random from the audiences rather than according to the order in which they registered. This was accomplished by a random number drawing. In addition to the comment recorder stationed at the main hearing, a second recorder was available in an adjacent room to receive comments without the need to await selection at the main proceeding. The hearing format used promoted open and equal representation by all individuals and groups.

1488-2

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.

Commentor No. 1489: Mary Lou Blazek
Oregon Office of Energy



Oregon

John A. Kitzhaber, M.D., Governor

September 13, 2000

Colette E. Brown, Document Manager
 Office of Space and Defense Power Systems (EM-50)
 Office of Nuclear Energy, Science and Technology
 U.S. Department of Energy
 19901 Germantown Road
 Germantown, MD 20874

Dear Ms. Brown:

Thank you for the opportunity to review the draft Nuclear Infrastructure Programmatic Environmental Impact Statement (PEIS).

Attached is a letter from Oregon Governor John Kitzhaber to Energy Secretary Richardson. That letter presents the State of Oregon's position on this issue: that the U.S. Department of Energy (DOE) failed to make a compelling case that the Fast Flux Test Facility (FFTF) is needed to accomplish any of the proposed missions and therefore the reactor should be permanently shut down.

In scoping comments submitted in October 1999, the Oregon Office of Energy stated it could not support any new missions for FFTF unless the following criteria were satisfied:

- There is a compelling need for any new mission
- FFTF represents the best choice for any new missions from economic, technical, public health and safety and environmental standpoints
- Operation of FFTF will not compromise Hanford cleanup funding, schedule or resources
- Operation of FFTF will not significantly increase Hanford's radioactive or hazardous waste burden

The Office of Energy also said DOE must include the following in its Nuclear Infrastructure draft PEIS:

- A detailed examination of DOE's projections for irradiation needs
- A broader selection of options...to meet the stated needs
- A complete examination of the costs of restarting (the Fast Flux Test Facility)
- A thorough examination of all potential impacts of FFTF operation on all current and projected Hanford cleanup operations.

Office of Energy
 625 Marion St. NE, Suite 1
 Salem, OR 97301-3742
 Phone: (503) 378-4040
 Toll Free: 1-800-221-8035
 FAX: (503) 373-7806
 www.energy.state.or.us

1489-1

1489-2

1489-3

Response to Commentor No. 1489

1489-1: DOE notes the commentor's opposition to restarting FFTF for expanding its existing nuclear facility infrastructure. Consistent with its mandates under the Atomic Energy Act, DOE is proposing this expansion 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.

DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert committees. In 1998, an Expert Panel convened to forecast future demand for medical isotopes estimated that the expected growth rate of medical isotope use during the next 20 years will range between 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 DOE's Nuclear Energy Research Advisory Committee (NERAC), established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. The growth projections were also adopted by DOE 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.

The United States currently purchases approximately 90 percent of its medical isotopes from foreign producers, most notably Canada. Although other manufacturers produce medical isotopes, DOE remains the key provider for a large number of isotopes 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

Commentor No. 1489: Mary Lou Blazek (Cont'd)
Oregon Office of Energy

September 13, 2000
Page 2

We believe the draft PEIS is fundamentally flawed in three ways. The chief example is DOE's artificial attempt to find one alternative that can accomplish all of the missions, rather than find the best alternative to meet each individual mission. By lumping the missions together, the number of reasonable solutions is understandably limited. If the missions are separated, and DOE addresses how best to meet each of these individual needs, there are additional, reasonable and likely less expensive alternatives to consider.

Second, much of the information and analysis we requested during the scoping process was not included in the draft PEIS released in July 2000. For example, DOE did not provide specifics about medical isotope needs. Instead, the PEIS dealt in generalities. DOE also did not provide a thorough analysis of potential impacts of an FFTF restart on Hanford cleanup.

Third, we are concerned that key information – primarily the cost analysis and the non-proliferation study (even though not required by law) – was not made available to the public in time to be thoroughly considered in this process. This is a major policy decision and DOE does a disservice to the public by proceeding without allowing sufficient time for public review. In the future DOE should ensure adequate information is provided in a timely manner for public review.

Additional technical comments are attached. If you have any questions about our comments, please contact me at 503-378-5544.

Sincerely,



Mary Lou Blazek
Administrator, Nuclear Safety Division

1489-4

1489-3

1489-5

Response to Commentor No. 1489

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 isotopes for medical applications and research. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the U.S. to meet future 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.

Through a Memorandum of Understanding with NASA, DOE also 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. Although research to identify other potential fuel sources to support these space exploration missions has been conducted, no viable alternative to using plutonium-238 has been established. 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.

It is the policy of this Administration that clean, safe, reliable nuclear power continue as a viable component of the United States' energy portfolio. In recognition of this need, the Administration and Congress have initiated nuclear energy research and development programs to address potential long-term barriers to expanded use of nuclear power (e.g., nuclear waste, proliferation, safety, and economics) and to ensure that current nuclear power plants can continue to deliver adequate and

Commentor No. 1489: Mary Lou Blazek (Cont'd)

Oregon Office of Energy

September 13, 2000
Page 3

Additional technical comments from the Oregon Office of Energy

GENERAL COMMENTS:

- The draft PEIS does not answer many of our questions about the potential impacts of FFTF operation on Hanford cleanup. Issues involving waste generation and its disposition are not adequately answered. For example, the draft PEIS incorrectly states that transuranic waste generated from operations at FFTF would go to the Waste Isolation Pilot Plant (WIPP). WIPP is allowed to receive only waste generated in defense-related activities. Therefore, we are unable to determine what will really happen with this waste. The final PEIS should clearly explain the amount and types of waste that would be generated in the production, irradiation and processing of targets – including liquid waste – and the final disposition of all waste.
- The draft PEIS concedes that current DOE reactors – the High Flux Isotope Reactor (HFIR) and the Advanced Test Reactor (ATR) can continue their current support of the medical and industrial isotope missions, including some growth. The draft PEIS says the reactors can not meet increased isotope needs when the plutonium 238 production mission is added to these reactors. Our recommendation is not to add the plutonium 238 mission to these reactors. The final PEIS should analyze available capacities at each of these reactors for medical and industrial isotope missions, without the plutonium 238 mission added on.
- The draft EIS should address how using Hanford's 300 Area facilities for processing would impact current DOE-Richland plans to clean up and demolish these facilities prior to 2010.
- The final PEIS should not attempt to minimize the impact of adding 16 tons of spent fuel to the current spent fuel inventory at Hanford. There is currently more than 2,100 tons of corroding spent nuclear fuel stored in aging water filled basins just a quarter mile from the Columbia River. Moving this spent fuel out of the basins and away from the river is one of DOE's most urgent risk cleanup priorities nationwide and will cost more than \$1.6 billion to accomplish. The draft PEIS states that the environmental impacts from Hanford's existing spent fuel is minimal, and therefore adding another 16 tons of spent fuel from restarting the reactor would therefore be minimal as well. The final PEIS should realistically assess the impacts of managing additional spent fuel at Hanford.
- DOE should identify specific isotopes that are in short supply. The draft PEIS dealt in generalities and identified many radioisotopes which are already well supplied by commercial producers.

1489-6

1489-7

1489-8

1489-9

1489-10

Response to Commentor No. 1489

affordable energy supplies. An enhanced DOE nuclear facility infrastructure is required to support such nuclear energy research and development for civilian applications.

1489-2: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

1489-3: Based on the scoping comments, the scope of the NI PEIS was expanded in a number of areas as outlined in Section 1.4 of the NI PEIS. In preparing this NI PEIS, DOE carefully considered all scoping comments received for both the Plutonium-238 Production EIS and the NI PEIS from the public, and all comments received during the scoping periods are part of the Administrative Record for the NI PEIS.

DOE has sought independent analysis of trends in the use of medical radioisotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert committees. In 1998, an Expert Panel convened to forecast future demand for medical isotopes and estimated that the expected growth rate of medical isotope use during the next 20 years will range between 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 DOE's Nuclear Energy Research Advisory Committee (NERAC), established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. The growth projections were also adopted by DOE 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.

Under the NI PEIS proposed action and consistent with its mandates under the Atomic Energy Act, DOE would enhance its existing nuclear facility infrastructure to, among other things, more effectively support production of radioisotopes for medical applications and research. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the U.S. to meet future 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.

Commentor No. 1489: Mary Lou Blazek (Cont'd)
Oregon Office of Energy

September 13, 2000
Page 4

- DOE's conclusions should consider that new diagnostic or therapeutic uses of radioisotopes could be answered by private industry producing the necessary isotopes. The final PEIS should consider subsidizing private industry to produce some of the isotopes which are not yet economical but which show promise in research.
- In July 2000, DOE's Office of Nuclear Technology recommended "dedicated facilities with a primary mission to produce isotopes." The Department of Energy's Nuclear Energy Research Advisory Committee subcommittee for isotope research and production planning concluded in April 2000 that "the production needs of neutron-rich isotopes for research purposes can be met by existing reactors." The report singled out the Missouri University Research reactor and the HFIR as being "better suited to meeting the demands of users who need small quantities of research isotopes at irregular intervals." DOE should reconsider use of the University of Missouri reactor for research isotopes and other viable alternatives to meet other needs.
- The draft PEIS does not make a compelling case to support an annual production rate of 5 kilograms of plutonium 238. The PEIS contains no documentation from NASA or from DOE to justify this quantity. Even if DOE's stated need is not inflated, the draft PEIS clearly indicates viable options for acquiring this amount of plutonium – options which DOE has discarded even though they could, individually or in combination, meet all of our plutonium 238 needs. The final PEIS should thoroughly analyze purchasing plutonium 238 from Russia, use of Canadian reactors and use of commercial reactors in the United States for the production of plutonium 238. These options should not be discarded simply because they may not be able to meet all of the proposed missions or because they do not result in an enhancement of the United States' nuclear infrastructure.
- The draft PEIS speaks in generalities related to the future need for nuclear power. It even makes a bold and questionable statement about renewed interest in nuclear power in the United States – despite the fact that not a single utility has ordered a new nuclear power plant in more than 20 years. The final PEIS should be specific about what new interest for nuclear power there is in the United States.
- The final PEIS should discuss the capacity to produce medical isotopes at the Isotope Production Facility, now under construction at Los Alamos. The final PEIS should consider whether this facility – combined with other existing DOE reactors and accelerators – can meet existing and projected medical isotope needs.

1489-10
(Cont'd)

1489-11

1489-12

1489-13

1489-14

Response to Commentor No. 1489

Although Hanford cleanup is not within the scope of the NI PEIS, information is included about the cleanup mission at Hanford and the land-use planning efforts. The restart of FFTF or any of the other proposed alternative facilities would not have an impact on the cleanup missions at the candidate sites.

- 1489-4:** As discussed in Section 1.3 of Volume 1, in addition to the range of reasonable programmatic alternatives evaluated in the NI PEIS, DOE could choose in the Record of Decision to combine components of several alternatives in selecting the most appropriate strategy. For example, DOE could select a low-energy accelerator to produce certain medical, research, and industrial isotopes, and an existing operating reactor to produce plutonium-238 and conduct limited nuclear energy research and development.
- 1489-5:** CEQ (40 CFR 1500 et seq.) and DOE (10 CFR Part 1021) implementation regulations do not require inclusion of cost and nonproliferation studies in an environmental impact statement. The basic purpose of the NI PEIS is to describe the alternatives under consideration for implementation (Section 2.5 of Volume 1) and the environmental impacts that would occur if these alternatives were implemented (Chapter 4 of Volume 1). Pursuant to CEQ regulations (40 CFR 1505.1(e)), agencies are encouraged to make ancillary decision documents available to the public before a decision is made. The associated cost report and nonproliferation report were made available to the public on August 24, 2000 and September 8, 2000, respectively. DOE mailed these documents to approximately 730 interested parties, and the reports were made available immediately upon release on the NE web site (<http://www.nuclear.gov>) and in public reading rooms.
- 1489-6:** The restart of FFTF would not impact the schedule or available funding for existing cleanup at Hanford. 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. In particular, information on waste generation by waste types and how this waste will be managed can be found in the Waste Management Sections of Chapter 4 for each of the alternatives and alternative options.

Sections 4.3.1.1.13, 4.3.2.1.13, 4.3.3.1.13, and 4.4.3.1.13 were revised to address comments received during the public comment period. This

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Chapter 1

- On Page 1-3, the draft PEIS says that some research isotopes are not being explored in part because of their high price. Yet the draft PEIS does not address how FFTF or any of its other proposed options would be able to provide isotopes at a competitive price. The final PEIS should provide this information.
- On Page 1-4, the draft PEIS says DOE produces a large number of radioisotopes that are used in relatively small quantities for research and that they are not purchased in quantities that would permit private industry to take over their production. However, the draft PEIS never identifies these specific isotopes. With generalities such as this, it is difficult to ascertain the specific need which DOE purports to meet. The final PEIS should provide these specifics.
- On Page 1-7, the draft PEIS states that as far as renegotiating its agreement with Russia to purchase additional plutonium 238, "The long-term viability of pursuing additional contract extensions or entering into a new contract is unclear." It appears from that statement that DOE has not raised this issue with the Russians because DOE is pursuing its own production capability. We urge DOE to further explore the Russian option.

Chapter 2

- The term "preconceptual" design is used often in this section. This term should be defined.
- Section 2.3.1.1 – The NRC review of FFTF's Final Safety Analysis Report is not described in adequate detail.
- Section 2.3.1.1 – The draft PEIS should explain the upgrades that were done to FFTF's Final Safety Analysis Report following the accident at Three Mile Island.
- Section 2.3.1.1.3 – page 2-14 – The statement is made that impacts of using highly enriched uranium bound the use of low enriched uranium. The EIS should further explain the bounding criteria.
- The missions actually requiring fast neutrons should be explained.
- Section 2.3.1.4 – page 2-24. The description of a commercial light water reactor is incorrect. Most are not 2 loops with 2 pumps per loop. Most are 4 loops, one pump per loop. Fuel assemblies are now generally 17x17, and operating cycles in many reactors are 24 months.

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section now states that "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. 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 activities (i.e., treatment and on-site storage) as described in this NI PEIS would be the same. In addition, either waste type would require disposal in a suitable repository. If it is transuranic waste, it would be nondefense waste and could not be disposed of at WIPP under current law. Because nondefense transuranic waste has no current disposal path, DOE Headquarters' approval would be necessary before a decision is made to generate such waste, as required by DOE Order 435.1. If the waste is classified as high-level radioactive waste, it is assumed for the purposes of this analysis that Yucca Mountain, Nevada, if approved, would be the final disposal site for DOE's high level radioactive waste."

- 1489-7:** Section 2.6.1 in Volume 1 of the NI PEIS was revised. As explained in this section, medical isotope production at DOE's HFIR and ATR may be sufficient for the short term, but would not be sufficient to meet long-term growth projections forecasted by the Expert Panel.
- 1489-8:** Hanford 300 Area facilities included in options under consideration for nuclear infrastructure activities are the Radiochemical Processing Laboratory (RPL) and Building 306-E (refer to Volume 1, Section 2.3.2.4 of the NI PEIS). There are no current plans to close down the RPL. However, Building 306-E is listed in the 300 Area accelerated closure plan (300 Area Initiative), with closure activities scheduled to begin in May, 2003. If the Nuclear Infrastructure Record of Decision selects for implementation an alternative option that utilizes Building 306-E, the building would be removed from the list of facilities to be closed until its part of the mission were completed.
- 1489-9:** The discussion in the Summary and Section 4.8.3.5 of the NI PEIS on the cumulative impacts for spent nuclear fuel management at the Hanford Site have been revised to clarify that the management of the existing spent nuclear fuel at Hanford results in a dose of less than 0.1 millirem per year to the maximally exposed member of the public.

This

dose is well within the DOE limits given in DOE Order 5400.5. As

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Chapter 3, Section 3.4

- Section 3.4.4.1.1 – page 3-89 does not and should discuss the recent discoveries of elevated groundwater tritium levels associated with the 618-11 burial ground.
- Section 3.4.9.4 – page 3-113 does not provide FFTF's accident/incident history. This should be included in addition to the generic site discussion.
- Section 3.4.9.4 – page 3-113. The origin of the accident categories mentioned in this section should be stated.
- Section 3.4.9.4. The Hanford Site's Industrial Safety Accident Rate should be stated.
- Section 3.4.11.1 – page 3-115. The processing of neptunium and medical isotope targets may result in the generation of liquid radioactive waste. The disposition of this waste stream should be clearly explained.
- Section 3.4.11.2, Transuranic Waste, page 3-116. This section discusses disposal of this waste at WIPP. The TRU waste generated from these missions will not be defense waste and cannot now be accepted at WIPP.
- Section 3.5.11.1 mentions that high level waste will not be discussed further in this section. However, for a commercial light water reactor, spent nuclear fuel is defined as high level waste by the Nuclear Regulatory Commission. It is appropriate to include this in the discussion of wastes in this section.

Chapter 4

- Section 4.2.4.9 – DOE should provide the basis for assuming that doses due to storage will be 10 percent of the doses due to target fabrication. This cannot be considered a conservative assumption without providing justification.
- The section refers the reader to Section 4.4.3.1.9 and Appendix H. Section 4.4.3.1.9 contains no information germane to this assumption, and Appendix H simply reiterates the assumption.
- Option 4 impacts should include increased decontamination and decommissioning impacts due to the storage of radioactive material in a currently clean building.
- Section 4.3.1.1.10, page 4-44 – The draft EIS should explain the basis for the 1×10^{-6} accident frequency.

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discussed in that Order, the dose limit from airborne emissions is 10 millirem per year, as required by the Clean Air Act; drinking water is 4 millirem per year, as required by the Safe Drinking Water Act; and the dose limit from all pathways combined is 100 millirem per year. DOE has committed to remove the spent nuclear fuel at Hanford for ultimate disposition in a geologic repository.

- 1489-10:** Consistent with the mandates under the Atomic Energy Act, DOE seeks to maintain and enhance its infrastructure to support production of radioisotopes for medical applications and research. DOE is not proposing to restart or build any new facility for the primary mission of serving commercial medical isotope producers. DOE merely seeks to fulfill its responsibility to ensure that there is a reliable supply of isotopes in the U.S. to meet future demand. DOE does not subsidize commercial producers. DOE does encourage the commercial sector to privatize the production of medical isotopes in certain instances. DOE does this by turning over production of certain isotopes to commercial entities once DOE has established that commercial production is economically viable, i.e., still continue to produce about 90 percent of the isotopes at its facilities. Over the years, about 10 percent of the isotopes initially produced by DOE have been privatized.
- 1489-11:** DOE acknowledges that while some existing reactors may possess the potential capability or capacity to support research isotope production as suggested in the "NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000", 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. As described in Table 2-4 of the NI PEIS, the research reactor at the University of Missouri lacks sufficient neutron production capacity to support the proposed action without impacting existing missions.
- 1489-12:** As explained in Section 1.2.2 of Volume 1 of the PEIS, the Russian purchase of plutonium-238 satisfies the near-term responsibility to supply NASA with the necessary fuel for space exploration. As discussed in Section 1.1 of Volume 1, in view of DOE's responsibilities under the Atomic Energy Act of 1954, as amended, DOE's preference is to establish a domestic plutonium-238 production capability. DOE's selection of 5 kg plutonium-238 production per year

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- Sections discussing Alternative 1, Options 4, 5, and 6 should contain a discussion of radiological consequences for normal operations, as well as accident consequences.

Chapter 5

- Page 5-16, section 5.1.4. Table 5-2 should list the August 1, 1997 Memorandum of Understanding (MOU) between DOE and the State of Oregon. A January 26, 1994 MOU with the Shoshone-Bannock Tribes is listed on the table for Idaho National Engineering and Environmental Laboratory at 5-17. The table indicates that the MOU with the Shoshone-Bannock requires consultation. The MOU with the State of Oregon also requires consultation. For completeness and consistency with the INEEL section, the *Draft PEIS* should be revised to include the MOU with the State of Oregon under the Hanford section of Table 5-2.
- Table 5-2 also omits the MOU between DOE and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The *Draft PEIS* should be revised to include the MOU with the CTUIR in the Hanford section for completeness and consistency with the INEEL section.
- The *Draft PEIS* should be revised to include information in Chapter 5 on standards for environmental management systems that will be used for each of the alternatives being considered. For example, the International Organization for Standardization (ISO) 14000 standards are widely recognized nationally and internationally as effective tools for managing day-to-day operations that impact the environment. The ISO 14000 standards address a wide range of issues including: top management commitment to continuous improvement, compliance, and pollution prevention; integrating environmental considerations into operating procedures; training employees in regard to their environmental obligations; and conducting audits of the environmental management system. Inclusion of an environmental management system standard such as ISO 14000 in the list of applicable standards will provide a framework to move beyond compliance and demonstrate the DOE's commitment to effective environmental management for any of the alternatives being considered in the *Draft PEIS*. The inclusion of information on environmental management system standards will provide a more accurate basis for assessing the environmental impacts of each of the proposed alternatives.

Appendix D

- Appendix D does not discuss the disadvantages of FFTF. Some disadvantages that we noted that should be included are: its large size makes it expensive to operate;

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is based on the uncertainties in the radioisotope power system technology development and requirements for backup units, as well as the variability in the amount needed to meet NASA's power requirements.

The continued procurement of plutonium-238 from Russia is evaluated as an element of the No Action Alternative. Use of commercial light water reactors (CLWRs) for the production of plutonium-238 is evaluated as Alternative 2, Options 4, 5, and 6. Section 2.6.1 of the PEIS discusses irradiation facilities including the Canadian reactors that were considered and dismissed.

1489-13: Nuclear energy currently provides approximately 20 percent of the United States' electricity needs. Clean, safe, reliable nuclear power has a role today and will continue as a viable component of the nation's energy portfolio. The NERAC Subcommittee on Long-Term Planning for Nuclear Energy Research has set forth a recommended 20-year research and development plan to guide DOE's nuclear energy programs in areas of material research, nuclear fuel, and reactor technology development. This plan stresses the need for DOE facilities to sustain the nuclear energy research mission in the years ahead. As discussed in Section 1.2.3 of the NI PEIS, such nuclear research and development initiatives requiring an enhanced DOE nuclear facility infrastructure fall into the three basic categories: materials research, nuclear fuel research, and advanced reactor development.

1489-14: The Isotope Production Facility (IPF) at Los Alamos National Laboratory produces radioisotopes using the Los Alamos Neutron Science Center's (LANSCE) half-mile accelerator that delivers medium energy protons. Among other isotopes, the IPF's three major products include germanium-68, strontium-82, and sodium-22. As a result of changing DOE missions, the production of radioisotopes at target area "A" of the LANSCE has been rendered inoperable. In order to replace the level of production lost due to this change, DOE is completing a new and more efficient IPF that would allow DOE to continue to produce most of these same isotopes in an effort to meet existing demand. As addressed in Section 2.6.1 of the NI PEIS, IPF at LANSCE was considered but dismissed from further evaluation because, although it can be used in tandem with the Brookhaven Linac Isotope Producer (BLIP) located at the Brookhaven National Laboratory to

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operating at reduced power; it uses MOX fuel or HEU fuel which results in supply problems and non-proliferation concerns; its protection system is 20 years old.

Appendix E

- Appendix E should discuss advantages or disadvantages associated with this new reactor. Appendix D in several places praises FFTF's advantages.

Appendix G

- Subsection G.3.1, at G-4 and G-5, discusses the Prevention of Significant Deterioration (PSD) requirements of the federal Clean Air Act. The *Draft PEIS* describes Hanford as a PSD Class II area, at G-5, and indicates that there are no PSD Class I areas within 100 kilometers of Hanford. The *Draft PEIS* further indicates that the designation of the Hanford Reach as a national monument may eventually lead to redesignation of the area as a PSD Class I area. Because the Hanford Reach is now a national monument, the *Draft PEIS* should be revised to analyze the impacts on Hanford as a PSD Class I area, not as a Class II area. This is consistent with "bounding" elsewhere in the *Draft PEIS*.
- Subsection G.4.2.2 describes the analysis of water quality impacts. Surface water and groundwater quality are described separately. However, surface water and groundwater are often connected hydraulically. The *Draft PEIS* should be revised to include an assessment of water quality and quantity impacts resulting from hydraulic connectivity between surface water and groundwater for each of the alternatives.
- Subsection G.7.2 describes impact assessment. The *Draft PEIS* indicates, at the bottom of G-12, that consultations have been initiated with state historic preservation officers and interested Native American tribes. The *Draft PEIS* should be revised to specify which tribes have been consulted. The omission of the MOU between DOE and the CTUIR from Table 5-2 suggests that DOE has not initiated consultations with the CTUIR. However, the Hanford Site contains significant CTUIR resources that may be impacted. The inclusion of a list of consultations will insure that such impacts are considered.
- G.9 Waste Management. The *Draft PEIS*, at G-16, indicates that "Hanford and the Nevada Test Site will be made available to all DOE sites for the disposal of low-level radioactive waste." This is one of a number of issues that the State of Washington has been negotiating with DOE. In accordance with "bounding" elsewhere in the *Draft PEIS*, this section should be revised to analyze how low-level waste from other DOE sites will be handled for each of the alternatives if it is not disposed at Hanford.

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supply near-term isotope requirements, it is unlikely that these facilities could accomplish reliable, increased isotope production at the level needed to support projected needs.

- 1489-15:** DOE's production and sale of radioisotopes fall into two categories - "commercial" and "research". "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. DOE prices these orders at full cost-recovery, meaning all direct and indirect costs of producing these isotopes are factored into the final cost. 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. Unlike commercial radioisotopes, DOE prices research isotopes to produce a reasonable return to the government but not discourage their use. Because small-quantity production of research isotopes is not financially attractive to private-sector producers, it 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.

- 1489-16:** DOE notes the commentor's views. Examples of research isotopes currently produced by DOE include Copper-67, used for the treatment and diagnosis of cancer, and Holmium-166, used for the treatment of rheumatoid arthritis. A full listing of the radioisotopes available from DOE is provided on the NE website at <http://www.nuclear.gov>. Section 2.7.3 of Volume 3 has been expanded to include a list of research isotopes identified by the Expert Panel (Section 1.2.1).

- 1489-17:** Under the No Action Alternative, DOE would continue to purchase plutonium-238 to meet the space mission needs for the 35-year evaluation period considered in the NI PEIS. However, DOE

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Appendix K

- K.3 Methodology. The *Draft PEIS* uses data from the 1990 Census as a baseline. The 2000 Census data is not due to be completed until December 31, 2000. However, some preliminary data has been released and reported in the media. DOE should include any 2000 Census data available when the final *PEIS* is issued and use such data to make its decision.

UNSOLICITED COMMENT:

Cost Analysis

The cost analysis is biased towards making FFTF look more competitive from a cost standpoint than it is. For example, the cost analysis adds \$281 million for the cost of deactivating FFTF to the options of building a new reactor or new accelerators, but doesn't add that cost to the "restart FFTF" option – even though the reactor would still have to be deactivated at some point, and future deactivation costs would be even greater. Alternatives 3 & 4 also presume new processing facilities will have to be built, even though existing facilities have already been identified in other alternatives as being available for modification at a lower cost.

Had DOE looked at separating the proposed missions, the cost analysis includes at least one alternative which is clearly far cheaper than restarting FFTF. A new low energy accelerator could support most of the medical and industrial isotope production mission and the nuclear research and development mission. Purchasing plutonium 238 from Russia would take care of that identified need. These numbers, taken from the cost analysis, provide one example of the much higher costs of restarting and operating FFTF:

Low energy accelerator/purchase Pu-238 from Russia	
Build new low energy accelerator	\$34.4 million (page 3-3)
Startup costs	\$0.79 million (page 3-3)
TOTAL CAPITOL COSTS	\$35.2 million (page 3-3)
Accelerator annual operating costs	\$ 4.5 million (page 3-3)
Purchasing plutonium from Russia	\$ 8.8 million (annually) (page S-5)
TOTAL ANNUAL COSTS	\$13.3 million
Costs after 10 years:	\$168.2 million
Costs after 35 years:	\$500.7 million
Restarting FFTF	
FFTF modification	\$37.7 million (page 3-3)
FFTF startup	\$276.3 million (page 3-3)

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recognizes that any purchase from Russia beyond the current contract period that ends in 2002 would require a contract extension or negotiation of a new contract and may require additional NEPA review.

- 1489-18:** Preconceptual design (or "pre-design") is a preliminary stage of design, based on knowledge of major items of equipment sufficient for approximate sizing, preliminary flow sheet specification, rough specification of utility requirements, and approximate sizing of buildings and structures.
- 1489-19:** Licensing of FFTF under the regulations for commercial reactors was not a regulatory requirement. However, the Energy Research and Development Administration (a predecessor to DOE) requested a technical review by the Nuclear Regulatory Commission. As a result, the FFTF underwent a technical safety review by the Nuclear Regulatory Commission before initial operation. The final safety analysis report (FSAR) for the FFTF, issued in 1975, was reviewed by the Nuclear Regulatory Commission and the Advisory Committee on Reactor Safeguards. The Nuclear Regulatory Commission safety evaluation report and recommendations were issued in 1979 and a 1979 amendment, and all open issues were addressed before the start of operation in 1982. One of the major issues addressed was verification of emergency decay heat removal by natural circulation of the sodium coolant. This was satisfactorily demonstrated during the extensive startup test program.
- Throughout the life of FFTF, the FSAR has been maintained via approved change control and engineering change notices. All updates and revisions have had the required reviews and approvals. No deficiencies in the FFTF design, analysis, facility condition, or operations have been identified or recognized that would prevent FFTF from meeting the safety objectives and intent of commercial nuclear safety regulations for equivalent facilities.
- 1489-20:** The FFTF was just beginning an extensive Acceptance Test Program at the time of the accident at Three Mile Island. Although a similar event could not occur at the FFTF because it is a liquid metal reactor, a detailed analysis of the causal factors was completed and a thorough review of the FFTF design, operation and emergency planning was performed, with consideration of recommendations made by the President's Commission on the accident, the Nuclear Regulatory

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TOTAL CAPITAL COSTS	\$314 million (page 3-3)
FFTF annual operating costs	\$56.2 million (lowest est) (page 3-3)
TOTAL ANNUAL COSTS	\$56.2 million
Costs after 10 years:	\$876 million
Costs after 35 years	\$2.281 billion

The above estimates presume similar costs for processing, transportation, etc, which should be the same. It does not include the costs needed to store and ultimately dispose of the additional spent nuclear fuel that would be generated by FFTF.

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Commission and various other industry groups. As a result of this review, a number of actions were identified to strengthen the FFTF's defense against occurrence of a serious emergency event and/or to improve the ability to cope with such an event, should one occur. These actions covered various topical areas including changes to the plant design and Technical Specifications, improvements to operating and maintenance procedures, enhanced operator training, and revisions to emergency planning and response. All of these actions were completed during the Acceptance Test Program (prior to the start of routine plant operations).

- 1489-21:** As presented in PEIS Section I.1.1.4.1, FFTF core radioisotope inventories were calculated for a mixed oxide fuel core and a highly enriched uranium fuel core. The radioisotope source term for the mixed oxide core is significantly larger than that for the highly enriched uranium core. The higher source term for mixed oxide fuel is due primarily to the plutonium inventory. Use of a lower enrichment uranium fuel core in FFTF would result in a source term similar to that for the highly enriched uranium core in inventory. Therefore, the radioactive source term for the mixed oxide core is bounding for both the highly enriched uranium and lower enriched uranium fuel cores at FFTF. In any case, as shown in the PEIS, even the mixed oxide fuel source term results in very low risk under accident conditions.
- 1489-22:** The missions requiring fast neutrons include: (1) production of certain medical radioisotopes and (2) certain materials research. Six of the 30 representative medical radioisotopes listed in Table C-1 of the NI PEIS can not be produced with thermal neutrons, but instead require fast neutrons. These product medical radioisotopes are: copper-64, copper-67, phosphorus-32, phosphorus-33, scandium-47, and yttrium-91. Production of these medical radioisotopes require fast neutrons because their neutron absorption cross sections are insignificant for thermal neutrons, but are largest for fast neutrons. Table 1-1 contained in Section 1.2.2 of Volume 1 presents the important treatment and diagnostic uses for these radioisotopes. Some areas of nuclear materials research require a fast neutron flux to simulate the effects of fast neutrons on components in nuclear power plants. Although nuclear power plants are designed to operate with a larger thermal neutron flux, they do produce a significant fast neutron flux which, over time, can affect material properties.

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- 1489-23:** The description of a commercial light water reactor in Section 2.3.1.4 of Volume 1 is intended as an example of one of many different pressurized water commercial light water reactor designs in operation in the U.S. The three pressurized water reactor vendors which designed all the currently operating pressurized water commercial nuclear power plants in the U.S. are: Babcock & Wilcox (now known as Framatome), Combustion Engineering (now part of BNFL), and Westinghouse (now part of BNFL). Their designs include: two hot and cold loops with two pumps, two hot loops and four cold loops with four pumps, three hot loops and three cold loops with three pumps, and four hot loops and four cold loops with four pumps. In addition, currently operating pressurized water nuclear power plants use fuel assemblies that are either 14 x 14, 15 x 15, 16 x 16, or 17 x 17 arrays of fuel rods. Current operating nuclear power plants operate 12-month, 18-month, or 24 month fuel cycles. The commercial light water reactor description for a pressurized water reactor design which is presented in Section 2.3.1.4 of the NI PEIS is representative of the range of loop and fuel designs.
- 1489-24:** Section 3.4.4 of Volume 1 is intended to provide a general overview of Hanford Site water resources. Specific discussions of surface water and groundwater resources in the Hanford 300 and 400 Areas, where facilities proposed to be utilized for the proposed activities are located, are provided in Volume 1, Sections 3.4.4.1.2 and 3.4.4.2.2, respectively. DOE considers the level of detail provided to already exceed that which is commensurate with the level of expected impact, as specified by CEQ regulations (40 CFR 1502.15). However, due to the relative magnitude of the cited finding and proximity of the 618-11 burial ground to the 400 Area, a brief discussion of identified tritium levels has been added to Section 3.4.4.2.2. Also, generalized groundwater contamination maps (including for tritium) have been added under Section 3.4.4.2 as a visual aid to understanding the discussions on Hanford groundwater contamination.
- 1489-25:** A history of incidents and accidents was added to Section 3.4.9.4 of Volume 1. No worker fatalities or serious injuries occurred during previous operations of the FFTF, nor did any significant radiological or chemical releases occur.
- 1489-26:** The accident categories given in Section 3.4.9.4 of Volume 1 have been removed. They were originally included as a convenience to the reader.

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- 1489-27:** A discussion of Hanford Site safety has been added to Section 3.4.9.4 in Volume 1.
- 1489-28:** As stated in the Waste Management Sections of Chapter 4 for each of the alternatives and alternative options, target fabrication and processing for medical isotope production would not produce any liquid radioactive wastes. Target fabrication and processing for plutonium-238 production would generate a small amount of liquid low level radioactive wastes. The amounts that would be generated, how the waste will be managed (i.e., treated, stored, and disposed) for each of the alternatives and alternative options are discussed in the Waste Management Sections of Chapter 4.
- 1489-29:** Information on waste generation by waste types and how this waste will be managed can be found in the Waste Management Sections of Chapter 4 for each of the alternatives and alternative options. Sections 4.3.1.1.13, 4.3.2.1.13, 4.3.3.1.13, and 4.4.3.1.13 were revised to address comments received during the public comment period. This section now states that “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. 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 activities (i.e., treatment and on-site storage) as described in this NI PEIS would be the same. In addition, either waste type would require disposal in a suitable repository. If it is transuranic waste, it would be nondefense waste and could not be disposed of at WIPP under current law. Because nondefense transuranic waste has no current disposal path, DOE Headquarters' approval would be necessary before a decision is made to generate such waste, as required by DOE Order 435.1. If the waste is classified as high-level radioactive waste, it is assumed for the purposes of this analysis that Yucca Mountain, Nevada, if approved, would be the final disposal site for DOE's high level radioactive waste.”
- 1489-30:** To provide consistency throughout the document, the definition of high level waste in DOE Manual 451.1 was used. Therefore, spent nuclear fuel is not provided under the Waste Management sections of the document and is discussed separately under Spent Nuclear Fuel. Clarification is provided for the reader in Section 3.5.11.1 of Volume 1.

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- 1489-31:** Appendix H, Section 2.3 has been revised to incorporate a more complete discussion of this assumption.
- 1489-32:** Section H.2.3 has been revised to incorporate a more complete discussion of this assumption. The reference to Section 4.3.1.1.9 of Volume 1 is intended to provide the reader with the information on processing from which the storage impacts are derived.
- 1489-33:** Decontamination and Decommissioning (D&D) of existing facilities is not within the scope of the NI PEIS. Before D&D activities were undertaken, DOE would prepare the appropriate environmental documentation to address the associated environmental impacts.
- 1489-34:** The FFTF Final Safety Analysis Report states that the unprotected loss-of-flow event, resulting in a complete core melt, represents the most severe accident analyzed for the FFTF. The frequency of this event was estimated to be 10^{-9} per year based on a sequence of internally initiated events. For the NI PEIS analysis, the frequency was increased to be 10^{-6} to incorporate non-internally initiated events such as external events and natural phenomena that could contribute to the severe core melt scenario. The main contributor to the increased frequency is a catastrophic earthquake. The magnitude of potential earthquakes with return periods greater than 10,000 years is highly uncertain. For the purposes of the NI PEIS, it was assumed that an earthquake with a return period of 1 million years would result in sufficient ground motion to cause major damage to FFTF resulting in a core melt scenario. An earthquake of this magnitude could result in severe effects to the entire region, including building collapses, power outages, and road hazards.
- 1489-35:** The sections discussing Alternative 1 Options 4, 5, and 6 do provide a discussion of the radiological consequences of normal operations. As noted in Sections 4.3.4.1.9, 4.3.5.1.9, and 4.3.6.1.9 of Volume 1, the consequences of normal operations for Alternative 1 Options 4, 5, and 6 are the same as for Alternative 1 Options 1 (discussed in Section 4.3.1.1.9), 2 (Section 4.3.2.1.9), and 3 (Section 4.3.3.1.9), respectively.
- 1489-36:** In order to provide consistency and to clarify that Table 5-2 includes only state environmental laws, regulations, and agreements (i.e., those that are a result of a statute, regulation, or court order) the reference to the January 26, 1994 Memorandum of Understanding (MOU) and the

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Agreement-in-Principle between DOE and the Shoshone-Bannock Tribes was deleted from Table 5-2 of the NI PEIS. The MOU between DOE and the State of Oregon was also not included in the table for the same reason.

1489-37: In order to provide consistency and to clarify that Table 5-2 includes only state environmental laws, regulations, and agreements (i.e., those that are a result of a statute, regulation, or court order) the reference to the January 26, 1994 Memorandum of Understanding (MOU) and the Agreement-in-Principle between DOE and the Shoshone-Bannock Tribes was deleted from Table 5-2 of the NI PEIS. The MOU between DOE and the Confederated Tribes of the Umatilla Indian Reservation was also not included in the table for the same reason.

1489-38: Chapter 5 of the NI PEIS presents the laws, regulations, and other requirements that apply to the proposed action and alternatives. Voluntary or best management practices, such as the International Organization for Standardization (ISO) 14000 standards, are not included but may be implemented on a voluntary basis.

1489-39: The cost to operate FFTF is addressed in the separate Cost Report. Non-proliferation issues involving FFTF, MOX fuel, and HEU fuel are addressed in the separate Nuclear Infrastructure Nonproliferation Impact Assessment. Both the Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment have been made available to the public. DOE has provided summaries of the Cost Report and Nuclear Infrastructure Nonproliferation Impact Assessment in Appendixes P and Q, respectively, in the Final NI PEIS.

It is true that FFTF is 20 years old, but it is DOE's newest reactor. Evaluations have shown that FFTF has sufficient life remaining to fully support the proposed 35-year mission. Section 2.3.1.1.2 in Volume 1 of the NI PEIS discusses the upgrades of the plant protection system.

1489-40: Positive features of the new research reactor are presented in Sections E.1 and E.8 (Appendix E) of the NI PEIS. Neither Appendix D nor Appendix E are intended to present advantages or disadvantages of FFTF or the new research reactor, but rather to present a description of the design and operation of these two facilities and their applicability to the stated missions described in Section 1.2 of Volume 1.

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- 1489-41:** DOE evaluates the impacts of any proposed projects/activities against the applicability thresholds for Prevention of Significant Deterioration (PSD) air permitting. This is because the Hanford Site is designated as attainment/unclassifiable for the criteria pollutants regulated (see Section 3.4.3.1 of Volume 1). Note that nonattainment areas are subject to the Clean Air Act, as amended in 1990, Title I program instead of the PSD air permitting provisions. The Class I designations for Washington State are listed under 40 CFR 81.434. The Hanford Reach National Monument is not included in this listing. In addition, DOE has not received any preliminary announcements of EPA's intention to redesignate the Hanford Reach National Monument as a Class I area. If such an announcement was made, EPA would communicate its intent via the Federal Register to allow public comment on the proposed action prior to implementation.
- 1489-42:** Separation of the surface water and groundwater discussions in Section G.4.2.2 is a formatting convention only. The hydraulic interconnection between surface water and groundwater at the DOE sites under consideration is recognized and discussed as appropriate in the applicable affected environment and environmental consequences sections. This includes provision of a more than adequate level of detail on hydrologic and hydrogeologic systems, sources of recharge and discharge, and existing surface water and groundwater contamination. As examples, the discharge of the unconfined aquifer system at Hanford in the form of seeps or springs along the Columbia River, as well as base flow to the river, is discussed in Volume 1, Section 3.4.4.1.1. Further, the affected environment sections for Hanford and INEEL (e.g., see Sections 3.3.4.1.2, 3.4.4.1.1, and 3.4.4.1.2) discuss wastewater disposal practices to surface ponds, the potential interaction of perched groundwater, and the quality of the associated discharges to underscore the significance of such discharges to groundwater quality. This is an important consideration for both the Hanford and INEEL sites, both of which are underlain by largely unconfined aquifer systems of great lateral extent. The same consideration for these interactions is also provided in the associated discussions of the Oak Ridge Reservation, in accordance with the differences in site geology and hydrogeology relative to Hanford and INEEL. Here the emphasis is on impacts to surface water. Due to the tilted nature of the underlying geologic strata, groundwater and surface contaminants follow relatively short flow paths to surface streams, and this unique distinction has been clarified

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in this NI PEIS (Section 3.2.4.2). Nevertheless, commensurate with the level of potential impact, these considerations have already been included in the assessment of impacts for each of the alternatives (e.g., wastewater management and water use).

- 1489-43:** A list of organizations contacted during the consultation process, including those related to Native Americans, Cultural Resources, and Threatened and Endangered Species (both Federal and State), has been included in Chapter 5. In order to provide consistency and to clarify that Table 5-2 includes only state environmental laws, regulations, and agreements (i.e., those that are a result of a statute, regulation, or court order), Memoranda of Understanding have been omitted from the table. Therefore, the MOU between DOE and the Confederated Tribes of the Umatilla Indian Reservation was not included in the table.
- 1489-44:** 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. Information on waste generation by waste types and how this waste will be managed can be found in the Waste Management Sections of Chapter 4 for each of the alternatives and alternative options.
- 1489-45:** As discussed in Sections K.3.1 and K.3.2 of Appendix K, projections of minority populations require baseline data from the decennial census and population projections for potentially affected states by race and Hispanic-origin at the census tract-level or block group-level of spatial resolution. Relevant baseline minority population data obtained from the latest decennial census are scheduled for release by the U.S. Census Bureau in late 2001 (See the U.S. Census Bureau's website at address www.census.gov/population/www/censusdata/c2kproducts.html for a description of planned release dates for year 2000 census data). Updated population projections and data required for identification of low-income populations at block group-level spatial resolution are scheduled for release in mid-2002.
- 1489-46:** See response to comment 1489-5.

The Cost Report was structured to clearly identify the implementation costs of the various alternatives. As shown in Tables S-2 and S-3 of the Cost Report, deactivation of FFTF is a proposed action under Alternatives 2, 3, 4, and 5 and which is the basis for including FFTF

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deactivation costs. In the same manner that HFIR and ATR deactivation costs are not included in Alternative 2, FFTF deactivation costs are not included in Alternative 1.

**Commentor No. 1490: Gary S. Carter
Strategic Energy Resources, Inc.**

9-12-00

**Strategic Energy Resources (SER) Comments on
The Programmatic Environmental Statement
For Accomplishing Expanded Civilian Nuclear Energy R&D and
{DOE} Isotope Production Missions in the United States (doe/eis-03100)**

Strategic Energy Resources, Inc. (SER) is a Virginia Company formed in 1997 to advance the production of nuclear isotopes in Commercial Light Water Reactors. Its president is Gary S. Carter, who is also currently a senior principal engineer at Framatome Technologies Inc. (FTI). Mr. Carter specializes in reactor vessel and internals design and repair. He works in nuclear service and nuclear electric project engineering functions. He was both a service and project engineer for the B&W TMI-2 recovery team and a submarine test engineer. Mr. J.R. Worsham is a senior principal physicist with FTI and is a partner in SER.

Points of Discussion:

1. The DOE has omitted the potential advantages of the PWR ex-core option for Pu-238 production, and discussed only the potential for in-core production. A major nuclear fuel supplier in conjunction with SER submitted proprietary information on ex-core and in-core production to the DOE in February of 1999. Now that in-core production has been discussed in the PEIS, ex-core potential should also be discussed in order to fully convey the increased economic benefits and improved safety issues. The safety issues that exist are those surrounding the higher potential environmental release of radioactive materials with in-core production. *Please note that SER requests the DOE to exclude the actual proprietary figures included in these comments from public record if possible.*
2. The ex-core option also needs to be addressed to balance the in-core discussion already offered. The in-core option requires significant fuel management change whereas the ex-core option does not. Furthermore, the ex-core option does not necessarily require any capital expenditures or hardware modifications to many of the currently operating PWRs.
3. PWR owners and operators are interested in Pu-238 given DOE discussion and mention of the ex-core option that requires no, or no significant, capital expenditures. They are not as enthusiastic regarding Pu-238 production given only in-core production options, with the corresponding licensing and required fuel management changes.
4. Since the DOE has included PWR in-core production option technical discussions in the PEIS, a fair and balanced discussion would address the ex-core option and the capability to adequately inform a broad base of the public, and the commercial nuclear utility industry. A balanced discussion of ex-core production capability would include:
 - 4.1 the increased safety potential for non-release of target and production material in any core breach or accident;

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- 4.2 the more likely potential to produce the required Pu-238 purity (<2ppm of Pu-236). (due to the neutron fluence spectrum and larger target diameter);
- 4.3. the ability to avoid the need for significant operator capital expenditures and fuel management changes;

5. Additionally, the DOE has summarily dismissed the capability of PWRs to produce long-lived medical and industrial isotopes in the ex-core region. SER also believes the discussion offered in Section 2.6.1 (Irradiation Facilities Dismissed) on page 2-67 is too harsh and final in its basic assumptions and conclusions with regard to PWR production capabilities. This is especially true given ex-core production potential for certain of these isotopes.

6. **First with regard to Pu-238 ex-core production.**

6.1 Strategic Energy Resources, Inc. (SER) has provided, (conceptually summarized in *Proprietary* Figures 1,2 & 3), a method (patent pending) for producing extremely pure Pu-238 (low Pu-236 <2 ppm) directly outside the nuclear core of many existing CLWRs, **with no reactor internals modifications required.**

6.2 This concept was formally presented in February of 1999 to the DOE in a proprietary prospectus from a prominent nuclear fuel company with the teaming support of SER. The prospectus included a statement of expression of interest in production of Pu-238 for NASA space missions from two (2) suitable reactor owners and operators. Many other appropriately designed, and operating PWRs with the necessary internals structures also currently exist. **Moreover, the commercial nuclear sector interest in the production of space, industrial and medical isotopes is just beginning to awaken. SER found significant interest from a number of contacted PWR operators when it became evident that no significant capital expenditures or fuel management perturbations are required to safely produce Pu-238 for NASA space missions. Similar interest exists for production of suitable medical isotopes.**

6.3 For the DOE to exclude mention of the ex-core production potential is an oversight in such a complex and comprehensive PEIS. Hopefully, the PEIS will be amended to include consideration of a safe, efficient and cost-effective production alternative to provide support and alternatives (depth) to the DOE nuclear energy isotope production missions.

6.4 Oak Ridge National Laboratory (ORNL) has expressed interest and capability to design the Np-237 targets for ex-core production as currently envisioned by SER in the previously mentioned 1999 prospectus.

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1490-1

1490-1: DOE notes that neptunium-237 targets can be placed in numerous commercial light-water reactor (CLWR) in-core and ex-core locations for the production of plutonium-238. The center fuel assembly in-core location was selected for evaluation in the NI PEIS because it was assumed that this would be the worst case location during postulated beyond design basis accident conditions. The Final NI PEIS has been revised (Section 2.3.1.4) to reflect that neptunium-237 targets can be dispersed in other in-core locations or in ex-core locations for the production of plutonium-238. Such design and core configuration details would be analyzed if DOE decides to pursue this option for the production of plutonium-238.

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6.5 Thermal neutron fluence levels have been evaluated by SER, Framatome Cogema Fuels / Framatome Technologies Inc. and found to be more than adequate for production. This production process has the added advantage of more thermalized high-energy neutrons. Thus there is less production of unwanted Pu-236. The potential for an adequate ex-core target design that meets the <2ppm Pu-236 requirement has been evaluated by competent nuclear physicists and is considered excellent. Core safety degradation and associated product release issues are essentially eliminated.

7.0 Notes: Regarding In-Core Limitations and Ex-Core Advantages

The current draft PEIS only mentions supposedly proprietary in-core PWR production potential.

7.1 In-core production target design will have to compensate for high energy neutrons (fast flux) in a very limited target diameter rod {≈0.430" dia.} to gain any hope of achieving the required low levels of Pu-236. They are not yet even conceptually designed.

7.2 No matter how in-core production is viewed, even including production in the center core fuel assembly, addition of target rods to a fuel assembly will require increased power production from the remaining fuel and require significant perturbations in fuel management which are extremely troublesome and costly to reactor operators.

7.3 It will be necessary to disassemble a previously discharged fuel assembly and install the replacement target fuel rods prior to insertion in the core center position. After irradiation, the center fuel assembly will again have to be disassembled, and the target rods removed. The burned fuel rods that were removed to make room for the target rods will now have to be specially disposed and handled in a special and unusual (ie expensive) manner to permit proper storage and disposal handling.

7.4 The in-core target fuel rods are significantly limited in diameter as compared to the potential target diameter for ex-core production targets. Approximately 0.43" dia. vs. 1.32" diameter.

7.5 Furthermore, the proposed in-core control component target rods may be limited in the allowable Np-237 enrichment and quantity, and may also be limited in radial volume, or as yet undefined composite target development, to enable production with the required Pu-236 contamination levels of < 2ppm.

7.6 Conclusion: The above limitations regarding in-core production of Pu-238 are eliminated through the use of SER ex-core production methods.

8.0 Removal of the ex-core targets as proposed by SER will be accomplished during non-critical path refueling activities. Ex-core target exchange would not be as complicated or as time consuming as current removal and exchange of Reactor Vessel

1490-1
(Cont'd)

1490-2

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1490-2: The commentor is correct in stating that the use of in-core CLWR locations for the production of plutonium-238 would have a more significant effect on CLWR operations as well as the quantity and purity of plutonium-238 that is produced compared to ex-core CLWR location production. As stated in response 1490-1 and revisions in the Final NE PEIS, Section 2.3.1.4, different in-core and ex-core locations were evaluated and the center fuel assembly was selected solely for the purpose of analyzing the worst case environmental impacts of beyond design basis accidents. Specific CLWR design and core configuration details would be analyzed if DOE decides to pursue this option for the production of plutonium-238.

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Material Surveillance Specimen Capsules which are being removed or exchanged in many of the nation's PWRs.

9.0 Furthermore, no facilities modifications will be required.

10.0 No modifications will be required to the reactor internals or to the reactor vessels to implement PWR ex-core production of Pu-238, or other industrial and medical isotopes.

11.0 With regard to the DOE's assessment and conclusions on PWR production of medical and industrial isotopes:

11.1 The conclusions given in paragraph 2.6.1 (page 2-67, first paragraph, lines 2 through 8) have some validity only for some short-lived isotopes. In line 9, the report states, "In the event CLWRs are used for medical isotope production {with no mention of industrial isotopes}, the selection of isotopes to be produced would be limited to those with relatively long half-lives because there are no CLWR sites with facilities for processing irradiated targets. {DOE states the obvious in that CLWR sites can't be expected to have facilities for processing irradiated targets when nothing is currently produced and the DOE has previously not been willing to consider the idea! - Can DOE consider such a possibility given the available on-site space and a willing partner?}

11.1.1 **First and foremost**, it should be stated that PWRs would be ideal for production of many medical **and** industrial isotopes. This is especially true when ex-core production methods, A) do not impact fuel management; B) do not require significant capital expenditures, and C) do not extend or impose on critical path refueling outage activities.

11.1.2 **Second**; the contention that production of all isotopes (including those with moderate and long half-lives) will require significant facility modifications into the reactor vessel and potentially the containment vessel is patently incorrect. It can be argued that production of short half-life isotopes may require such modifications. However, ex-core production of long-life isotopes (eg. tritium- 12.3 yrs; Pu-238- 87.7 yrs; strontium 89- 50.52 days; Cobalt 60- 5.27 yrs; Cesium 137- 30.07 yrs), in a batch process, would require absolutely no facilities or reactor vessel and internals modifications in many of the operating PWRs in the US and the world.

11.1.3 **Third**; not only are no facilities and vessel modifications required for ex-core production, but the DOE's contention that subsequent refueling outage duration would be extended is also totally incorrect. To accomplish the DOE's Pu-238 production goals of approximately 7 or 8 Kilos per 18 month fuel cycle, no more than two or three ex-core production targets will be required. These ex-core targets can be easily exchanged at any time during the refueling outage with normal refueling pool levels and with the plenum assembly removed as is normally required for refueling.

1490-2
(Cont'd)

1490-3

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1490-3: The commentor is correct in stating that long half-life medical and industrial radioisotopes can be produced in CLWR ex-core locations without any significant impact on CLWR operation or plant modifications. The Final NI PEIS, Section 2.6.1, has been revised to recognize this capability. However, this revised NI PEIS section also notes that only one of the isotopes delineated in the Expert Panel's Report, strontium-89, was considered in candidate for CLWR ex-core production and that approximately 10 CLWRs with scheduled reactor refueling outages every 2 to 3 months would be required to provide a continuous and reliable supply of strontium-89. Since other isotopes identified in the Expert Panel's Report could not be produced in CLWRs with 18 to 24 month refueling schedules, CLWR use for medical and industrial radioisotope production was not considered a reasonable alternative.

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11.1.4 **Forth**; initial installation and subsequent exchange of only 2 or 3 ex-core target rods is not expected to either meet or exceed the effort, and planning that is normally required for a B&W reactor specimen capsule exchange. Existing underwater on-site casks, refueling pool handling methods and some tooling may be applicable in both these endeavors for certain B&W designed reactors and possibly many other Combustion and Westinghouse reactors (eg McGuire, etc).

11.1.5 **Fifth**; since there are no penetrations or modifications required for long to moderate half-life isotopes being produced in a PWR ex-core region, the DOE statement that extra nozzle penetration inspections can extend an outage and increase outage cost is in error with regard to ex-core production of the long to moderate life isotopes.

11.1.6 **Sixth**; PWRs should not be summarily dismissed as being unable to support DOE nuclear research and development missions for long and moderate life isotopes when ex-core production methods are employed.

11.1.7 **Finally**; SER maintains the DOE conclusions given in section 2.6.1 concerning PWR isotope production require significant reevaluation with regard to the production of moderate and long half-life isotopes. The DOE has focused only on in-core production methods and omitted in-core safety considerations. By totally excluding consideration for development of SER's ex-core production methods, the DOE has effectively denied the PWR owners a fair opportunity to compete in that in-core production methods may prove unacceptable or unobtainable. *Lastly, the DOE has made no serious effort to place the expanded production of nuclear isotopes needed for industry and medicine in the hands of private industry in what should eventually become an indigenous commercial endeavor in the United States.*

SER continues to offer explanations and debate the PWR ex-core production capability in greater detail, and in person, and sincerely appreciates the efforts of Ms. Colette Brown of the Office of Nuclear Energy, Science and Technology to provide a venue for this presentation within her office. SER respectfully requests the DOE now consider these formal comments in more detail and appropriately amend the PEIS Report to include the ex-core production potential. These comments are herewith formally submitted in writing to the DOE at 2:00 pm on September 12, 2000 at the Germantown office of the DOE, Room A270. Copies are also being submitted to the Office of Management and Budget, to select members of the House and Senate Armed Services Committees and to the Nuclear Regulatory Commission.

1490-3
(Cont'd)

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12.0 With regard to the DOE's COST assessment and conclusions on PWR production of Pu-238, medical and industrial isotopes:

12.1 SER believes the DOE has failed to consider significant options in their alternative 2 conclusions offered on page S-10 of the PEIS supplement "Cost Report for Alternatives". First SER and its associates have been in contact with Dr. Robert Wham at Oak Ridge regarding ex-core Pu-238 target design. Dr. Wham has been appraised of the ex-core potential and is familiar with the basic design parameters. SER's understanding of ORNL's target design capabilities and the advantages discussed with ORNL for ex-core target design do not, in SER's opinion, lend themselves to a "high risk" design. DOE is strongly recommended to discuss the PWR ex-core target design capability with Dr. Wham who continues to provide assistance to the Office of Science and Technology.

12.2 Secondly (Pg. S-10); If a development target were to experience design or operational problems in one reactor, it is a gross oversight to assume that DOE can only contract for development testing in any one reactor. Many U.S. PWRs will have the capability and will to support prototype target development given adequate compensation and design assurance for safe and unfettered plant operation with the target in place. The DOE should consider development testing contracts with more than one US PWR in any event to minimize the potential for operational problems at any one single reactor.

12.3 Third (Pg. S-10); CLWR irradiation costs are uncertain only because DOE has no known recent history of approaching the U.S. commercial nuclear power owners and operators to produce isotopes. If DOE engages more than one PWR owner/operator for isotope production, competition, American enterprise and ingenuity will prevail. The DOE should not interpret its charter, (as stated on page 1-1 under the amended Atomic Energy Act of 1954) as a license for the US government to directly produce non-defense related nuclear isotopes. However, there should be no reason that given proper safeguards, the DOE cannot sanction even the production of defense related (non-weapons) research and deep space power isotopes in commercial PWRs.

12.4 SER does not favor the option evaluated on page 2-3 whereby the US would continue the purchase of Pu-238 from Russia except as an interim measure in order to bring indigenous production capability on-line.

12.5 On page 2-9 DOE states that all alternative 2 options must be saddled with the deactivation costs for the FFTF. This can only be a fair assessment if the DOE also factors in the benefit of not operating the FFTF for all other alternatives during development of the quickest scheduled alternative. According to the OMB, FFTF operation cost may approach 30 to 40 million dollars per year. However, SER maintains the FFTF deactivation costs are inappropriately placed in relation to any cost evaluation of alternatives 2, 3 or 4. FFTF deactivation should stand alone and should have been funded under existing DOE/DOD program costs. SER notes that DOE includes FFTF deactivation costs associated with alternatives 3 and 4 (construct one or two new accelerators and construct a new research reactor- see page 3-4).

1490-4

1490-4: The CLWR target development evaluation assumed the prototype target design or multiple target designs would be irradiated in the CLWR for one fuel cycle. During the second fuel cycle the design or designs would be evaluated, the final design selected, and targets fabricated in production quantities. Production quantities of neptunium-237 targets are inserted into the CLWR for irradiation during the third fuel cycle. DOE considers the completion of all CLWR prototype target design testing in a single test cycle or fuel cycle a high risk.

1490-5

1490-5: The costs of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. DOE prepared a separate Cost Report to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the alternatives presented in the NI PEIS.

CLWR irradiation costs are uncertain because DOE has no recent history of contracting with CLWR owners for irradiating targets for the production of isotopes. The estimates were based on general discussions with representatives of the CLWR industry. CLWR owners have not directly contacted DOE with an expression of interest.

1490-6

1490-6: DOE would not purchase plutonium-238 as an interim measure in order to bring indigenous production capability on-line. Large quantities of plutonium-238 are not stockpiled in advance of needs due to budget constraints and the additional processing required to remove decay products that occur during extended storage. The purchase of plutonium-238 from Russia could take place under the No Action Alternative and Alternative 5, Permanently Deactivate FFTF; however, it would not occur if DOE decided in the Record of Decision to produce plutonium-238 domestically (i.e., if any other alternative were selected).

1490-7

1490-7: 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

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12.6 Comments concerning evaluations on page 3-4; DOE may be per-supposing the PWR target design parameters without adequate consultation. Stainless steel encased Pu-238 targets may not be optimal for either PWR ex-core or in-core use. Zircaloy versus stainless tube encasements, for instance, could offer the best ex-core target design encasement material. DOE should consult with Dr. Wham (ORNL) regarding desired neutron fluence and spectra and SER regarding the available PWR ex-core and in-core neutron fluence and spectra.

12.7 On page 3-5, next to last paragraph, summary costs for alternative 2 seem to be omitted.

Respectfully,

Gary S. Carter
President: SER, Inc.
754 Winding Way Rd.
Lynchburg, Va. 24502
(804) 239- 6701

J.R. Worsham
Senior Principal Physicist (SER)
4708 Alclif Rd.
Lynchburg, Va. 24503
(804) 384-9257



1490-8

1490-9

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so the Secretary of Energy would have this information along with other data for consideration. The Cost Report did not identify the source of funding for implementation.

1490-8: The Draft NI PEIS, Section 2.2.2.1, Plutonium-238 Production Target Fabrication, states that CLWR targets would have stainless steel or Zircaloy cladding. The PEIS did not presuppose the CLWR target design. The target designs were postulated to a level of detail appropriate to assess the environmental impacts associated with plutonium-238 production, target fabrication and post irradiation target processing.

1490-9: The commentor is referring to page 3-5 of the Cost Report. Summary costs for Alternative 2 are presented on page 3-4 of the Cost Report.